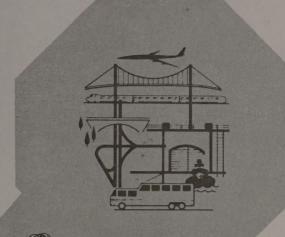
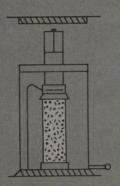


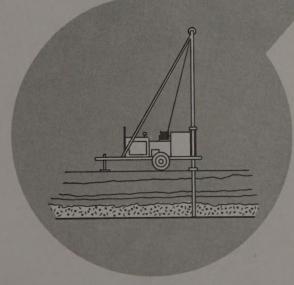


GEOTECHNICAL ENGINEERING BUREAU









PRELIMINARY GEOTECHNICAL EVALUATION
BARRON ROAD AND RIDGE ROAD SITES
STEWART AIRPORT

JULY 21, 1995





MEMORANDUM DEPARTMENT OF TRANSPORTATION

TO: Steven T. Baldwin, Aviation Division, 4-150

FROM: Wesley P. Moody, Director, Geotechnical Engineering Bureau, 7-102

Was fail for the

SUBJECT:

PRELIMINARY GEOTECHNICAL EVALUATION

PROPOSED BARRON ROAD AND RIDGE ROAD SITES

STEWART AIRPORT

DATE: July 21, 1995

The subject preliminary report is attached. It is based on historic records, a field inspection by Bureau Engineering Geologists and the knowledge of our geotechnical engineers and engineering geologists familiar with design and construction in similar conditions in the vicinity of these two sites.

Also attached is a listing of services the geotechnical engineering program is capable of providing, if requested.

If further assistance is needed, please call me at 457-4712.

WPM: DM

Attachments

NYSDOT Library 50 Wolf Road, POD 34 Albany, New York 1223?

GEOTECHNICAL ENGINEERING SERVICES AVAILABLE FROM THE GEOTECHNICAL ENGINEERING BUREAU

Geotechnical engineering personnel are capable of providing full geotechnical engineering services from design concept through construction completion if requested, or any selected portion of the total project.

SUBSURFACE EXPLORATION

- Drilling
- Geophysical Surveys
 - Seismic Surveys
 - Resistivity Surveys

LABORATORY TESTING OF SOILS

- Classification tests
- Triaxial
- Consolidation
- Permeability

DESIGN ANALYSIS AND RECOMMENDATIONS

- Building foundation design and specifications
- Pavement Design Roadway/Parking lots
- Erosion Controls
- Earthwork Specifications
- Granular Material Sources

CONSTRUCTION SUPPORT

- Technical assistance
 - Geotechnical Engineering assistance
 - Engineering Geologists assistance
 - Preblasting meetings; blasting safety
 - Vibration Monitoring
 - Field testing of soils
 - Gradation
 - Compaction
 - Laboratory soil testing

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PRELIMINARY GEOTECHNICAL EVALUATION BARRON ROAD AND RIDGE ROAD SITES STEWART AIRPORT

NEW YORK STATE DEPARTMENT OF TRANSPORTATION GEOTECHNICAL ENGINEERING BUREAU



PREEDMINARY GEOTECHNICAL EVALUATION BANKRON ROAD AND PRINCE ROAD STITS

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I. INTRODUCTION

This report synthesizes geologic and geotechnical data available at the Barron Road and Ridge Road development sites at Stewart Airport. A preliminary geotechnical evaluation of these sites by both experienced Geotechnical Engineers and Geologists familiar with design and construction in similar conditions in the vicinity of these sites has been addressed based on a summary of this data.

Generally, the soils at both sites are mapped as a dense till of varying thickness over shale bedrock with the exception of the areas delineated as wetlands.

We conclude that all earth and rock materials at both sites, excluding the areas delineated as wetlands, are fully capable of supporting the proposed development without special treatment and that there will be no unusual associated foundation costs.

II. GEOLOGIC HISTORY

The bedrock underlying the subject area consists entirely of the Ordovician Martinsburg Formation. This type of rock was originally deposited as layers of silt and sand, which later became lithified into alternating strata of sandstone and shale. Subsequent tectonic forces from the southeast folded these strata, so that the horizontal layers of shale and sandstone became nearly vertical layers of rock. Over time, these beds eroded at varying rates, with the soft shale eroding more quickly than the harder sandstone. This has left higher ridges of sandstone which generally trend north to south.

The bedrock topography in the area is generally covered by layers of unlithified glacial deposits. The most common of these is glacial till, an unstratified deposit consisting of silt, sand, cobbles, and boulders. There is also a deposit of lacustrine sand and gravel at the western edge of the subject area. This was the result of a temporary lake created by impounded glacial meltwater as ice retreated from the area, approximately 14,000 years ago.

The topographic elevation of both parcels varies from a low of about 400 feet above sea level to a high of 540 feet, on the Ridge Road property. The highest hills within all of Stewart Airport and the buffer zone are drumlins, which are streamlined hills consisting of compact till. The drumlins usually have a rock core. The till in the drumlins is extremely dense. Similar till formations on the



Airport, which were excavated recently, sometimes required blasting to remove the till.

There are wetlands present throughout the Stewart properties, which are generally at elevations below 430 feet. These are areas of poor drainage, where a thin cover of glacial till overlies bedrock.

A. BARRON ROAD SITE

The area of lacustrine sand and gravel (paragraph 2, above) straddles the Barron Road property, within the Town of Montgomery. The northern limit of the sand and gravel is about one mile south of I-84, and extends southward about one-half mile. The rest of the Barron Road property consists of glacial till over bedrock. There are no drumlin hills on the Barron Road property.

B. RIDGE ROAD SITE

The surficial geology of the Ridge Road property consists of glacial till. There is a drumlin present to the west of Ridge Road, approximately one-half mile south of I-84 and extending south for 3000 feet.

III. TERRAIN RECONNAISSANCE

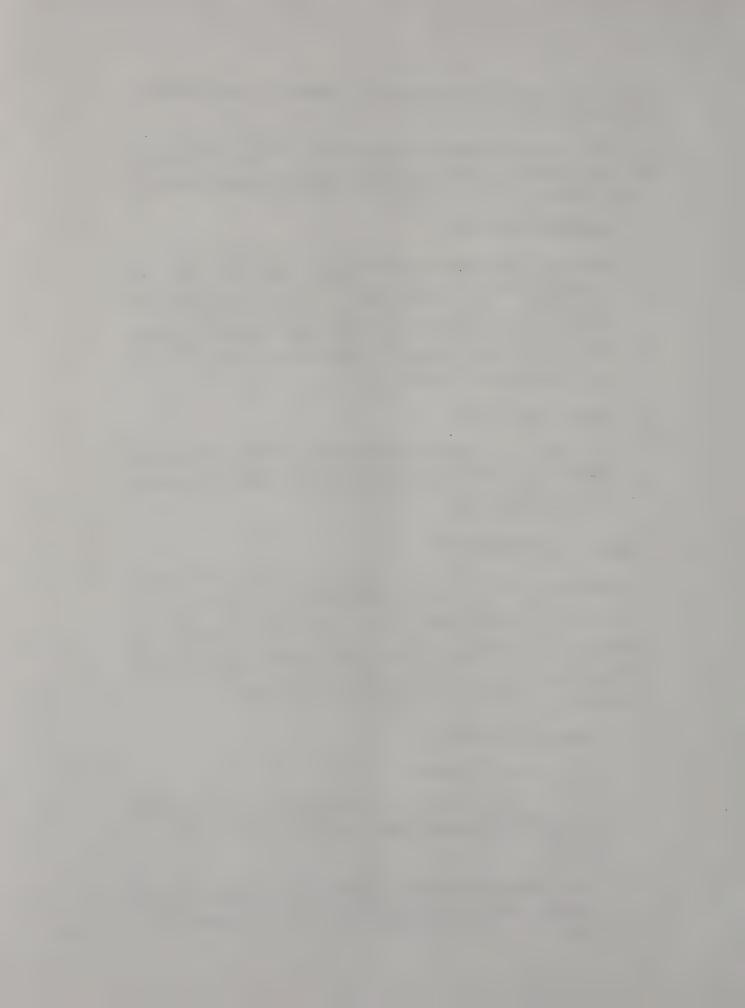
The Surficial Terrain Unit Maps show broad areas of soil deposits that have similar engineering characteristics. The limits of the units were established using the Soil Conservation Servie maps for Orange County issued in 1981. The units were determined by considering parent material, climate considerations and depositional methods. Additionally, behavior of groundwater is indicated where it affects a unit for a significant portion of the year.

A. BARRON ROAD SITE

Please refer to Figure 3.

The topography of the site is generally flat to slightly rolling. The elevation ranges from 360 to 400 feet above sea level.

The predominate surficial soil deposit is thin till over bedrock. Bedrock is generally four feet or less below the surface. This depositional unit is very common in the



southern sector of the site, adjacent to and south of an area mapped as man-made cut and fill. Excavation of the overlying till can facilitate the location of footings on rock, and the general uniformity in elevations suggests that transition areas between soil and rock will be minimal. Excess water should not be a concern.

Another major depositional unit is a rock outcrop/thin till complex. This unit generally consists of 65% outcrop and 35% thin till. It can be found in the northern sector, surrounding areas of thin till and lacustrine deposits. Another large area of this complex occurs at the southeastern tip of the site. Rock cuts and earth/rock combination cuts can be expected if footing or floor elevations are to be located at shallow depths below existing ground surface.

The soil deposit in depressions in the northeast area of the site consists of poorly drained glacial lake deposits comprised of clay, silt, and fine sand. Cuts in this deposit can be troublesome, resulting in flowing conditions due to the fine-grained material. However, this problem should be minimized by the fact that his deposit is located in relatively small areas.

Other soil deposits on this site consist of relatively small areas of glacial outwash, deep till, poorly drained glacial lake deposits, and poorly drained organic deposits. The organic deposits occur in a narrow strip along the southwestern border of the site.

Please refer to the accompanying tables entitled "General Terrain Unit Characteristics," and "General Earth Engineering Considerations" for more detailed information concerning each depositional unit.

B. RIDGE ROAD SITE

Please refer to Figure 4.

The topography of the site is rolling to hilly. The elevation ranges from 400 to 540 feet above sea level. The highest elevation differential (140 feet vertical in 1000 feet horizontal) occurs in the southwestern quadrant of the site.

Thick till (greater than 5 feet) is the predominant surficial



soil deposit throughout the site. Relatively small deposits of lacustrine and poorly drained till are found in the northern sector of the site. These deposits are surrounded by thick till.

A stream enters the site at about the middle of the southern border, flowing basically north to the central portion of the site. At that point it then turns to the west, and exits the site at about the middle of the western border. The stream flows through deposits of recent alluvium, thin till and rock outcrop complex, and lacustrine bottom sediments as it traverses the site.

C. SUMMARY

The Federal Environmental Impact Statement for Stewart International Airport Properties prepared by Berger, Lehman Associates, July 1992, presents an overview of anticipated surface soil conditions. The two property areas now being considered were rated as moderate to severe for building site use. Their moderate to severe rating was based on existing slope inclinations and expected high water levels for small commercial sites.

We have evaluated the two property areas using an interpretation of existing soil mapping and criteria based on engineering behavior and have determined that the soils in each area provide a competent building foundation. The soils will exhibit suitable behavior for building foundations concerning bearing capacity, settlement, and stability. However, each site will require significant grading to accommodate a large (750 to 1500 feet X 1800 feet) building. The groundwater conditions can be controlled during construction with normal practices.

IV. SUBSURFACE INVESTIGATIONS

BORINGS

A search for all available subsurface explorations that were progressed in the vicinity of the two proposed sites was conducted by Bureau personnel. A total of nine subsurface explorations were located and are plotted on Figure 1 and Figure 2. The holes were originally progressed to support the preliminary engineering evaluation of potential Super Collider sites during May 1987. Copies



of the subsurface exploration logs are attached to this report.

Bedrock was encountered in all four inch cased drill holes. The depth to bedrock varied between ten to twenty feet below the ground surface and from approximate elevation 355 to elevation 440. Soil samples that were retrieved had blow counts ranging from 9 blows (NYS standard) or 12 (Standard Penetration) to 32 blows (NYS standard) or 41 (Standard Penetration). The samples were principally identified as sands, silts, and gravels. No layers of soft, plastic soils which could present difficult settlement and/or stability problems were encountered in the borings.

In addition to the NYSDOT borings, the U.S. Geological Survey has records of domestic water wells within the subject properties. One of these, #130-411-1, is located on Barron Rd., 250 feet south of I-84. It is a rock well 47 feet deep, which has four feet of casing. This means that there is four feet of overburden above the bedrock. The second well, #130-409-1 is located on Ridge Road, 800 feet south of I-84. It is a rock well 114 feet deep with 48 feet of casing, so that rock is 48 feet below ground surface. The locations of these wells are shown on Figure 1 and Figure 2.

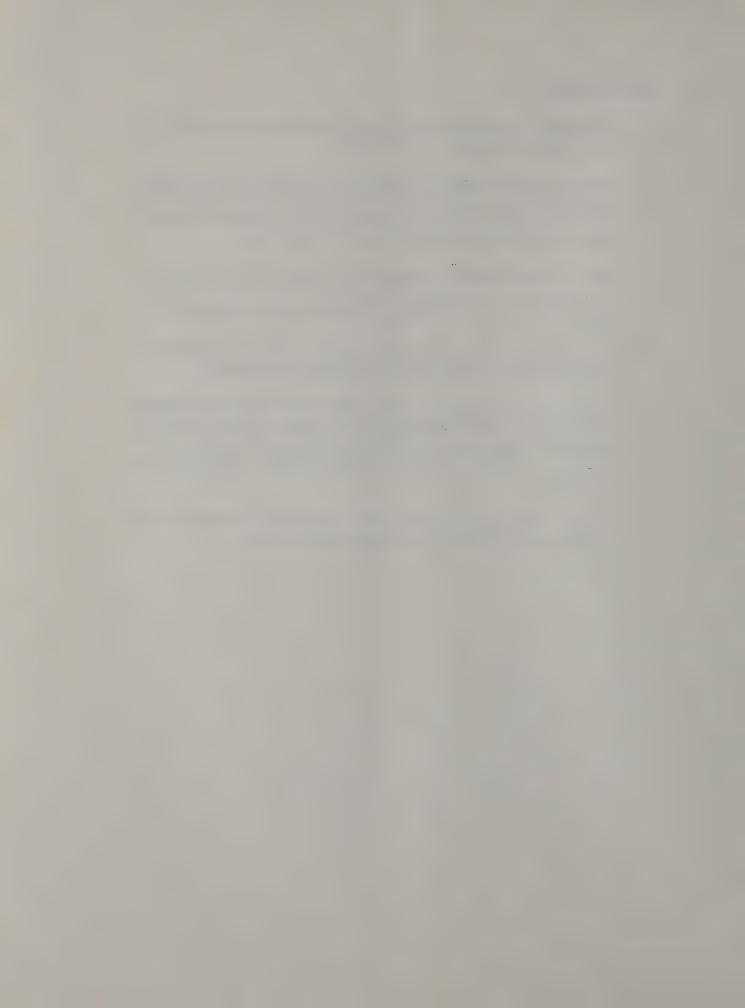
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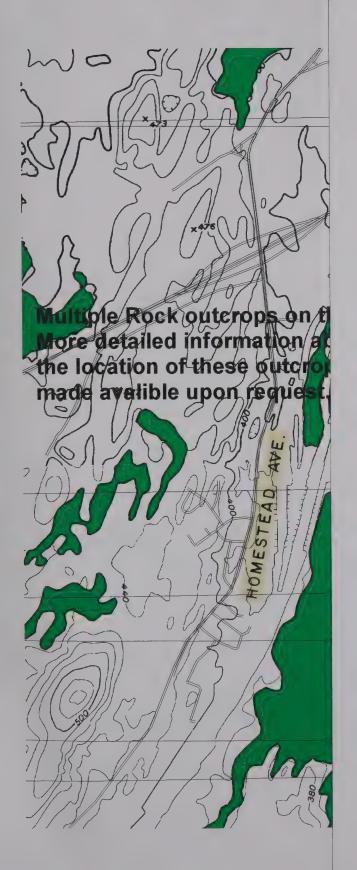
There were six seismic points shot on the subject site in 1987. seismic points are in two groups of three points each. SP 20, 21, and 22 are located just west of Ridge Road, about 2400 feet south of I-84. SP 20, the westernmost of this group of points, shows a depth to rock of 17 feet, with seven feet of loose till over compact till over rock. SP 21 has a depth of 25 feet to rock, with seven feet of loose till over compact till. SP 22 shows a depth to rock of 33 feet, with 10 feet of loose till over compact till. The second cluster of seismic points is located about 850 west of Ridge Road, approximately 6000 feet south of I-84. SP 25, the northernmost of these three points, shows a depth of 24 feet to rock, with 7 feet of loose till overlying compact till. SP 24 has a depth to rock of 26 feet, with six feet of loose till overlying compact till. shows 29 feet to rock, and also has six feet of loose till over compact till. All the seismic points are shown on Figure 1 and Figure 2.



V. CONCLUSIONS

- Generally, the soils at both sites are mapped as a dense till of varying thickness over bedrock.
- Based on all information available, our preliminary assessment indicates that no major soil problems should be anticipated in the construction of the foundations for the proposed development at either the Ridge or Barron Road Sites.
- No unusual foundation treatments or costs are anticipated in founding the building(s) in cut locations. This statement applies to all areas excluding those mapped as wetlands.
- It is evident that considerable excavation will be necessary to obtain a suitable area for the proposed development.
- Based on our experience, the use of the till soils as embankment construction material can be a problem if the material is allowed to get wet. Generally, proper construction procedures, including good surface drainage, minimize this concern.
- Other developments have been successfully constructed in similar soil and rock conditions at the airport.





Drill Holes (Depth to rock)
Seismic Tests (Depth to rock)
Orange County Roads
Region 8 Rts.
Orange County Wetlands (DEC)

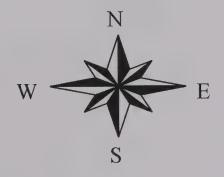
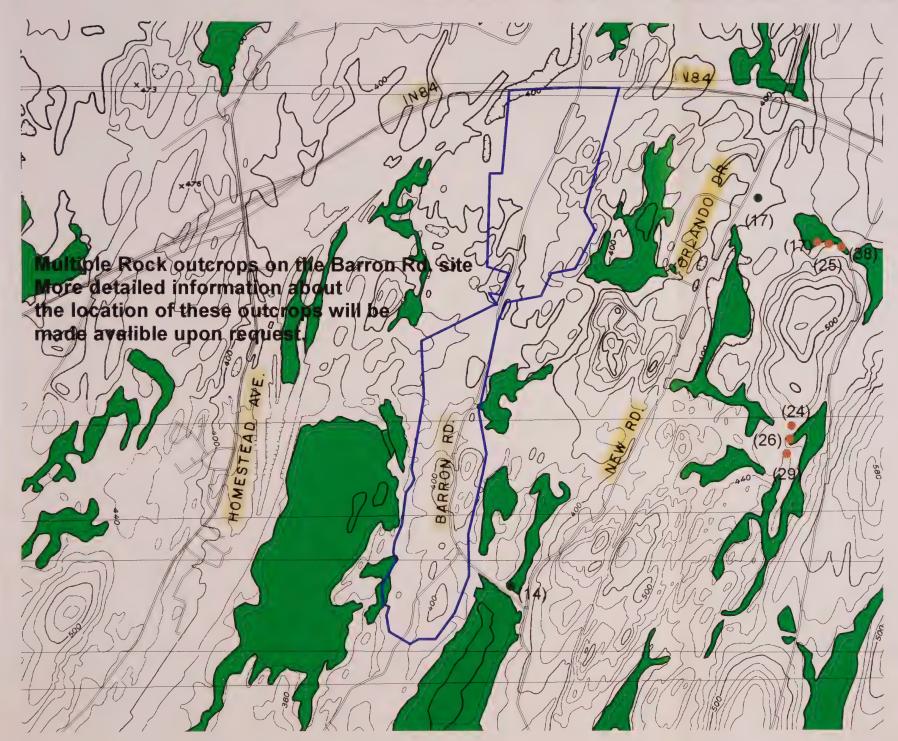


Figure 1 Rock Outcrop Map Barron Rd. Site



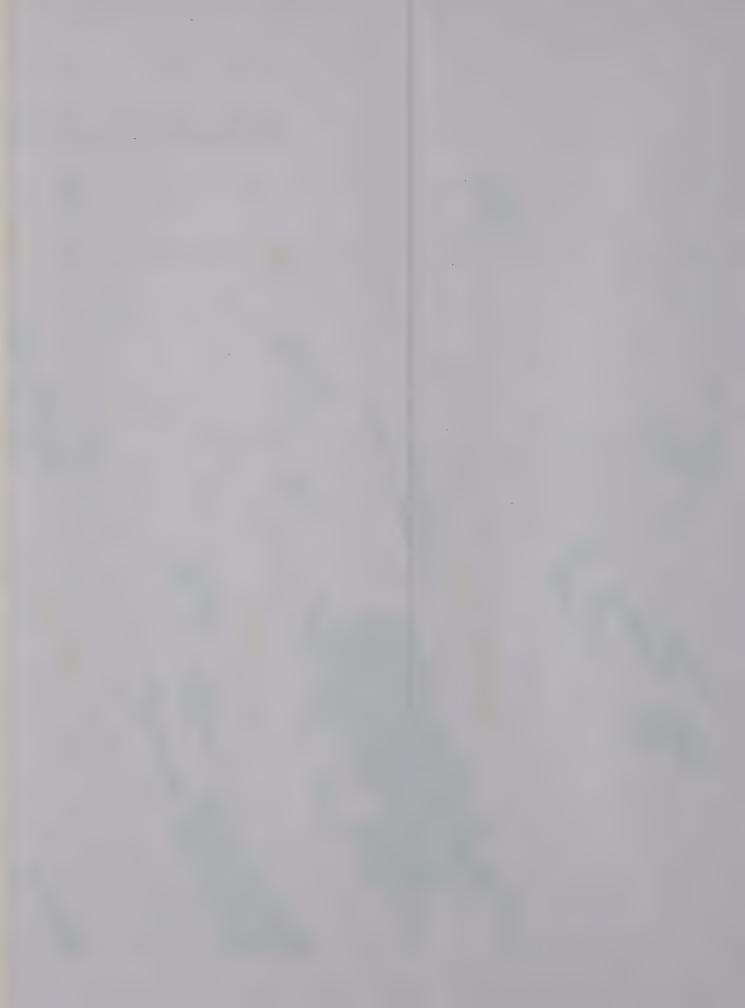
Barron Road Site

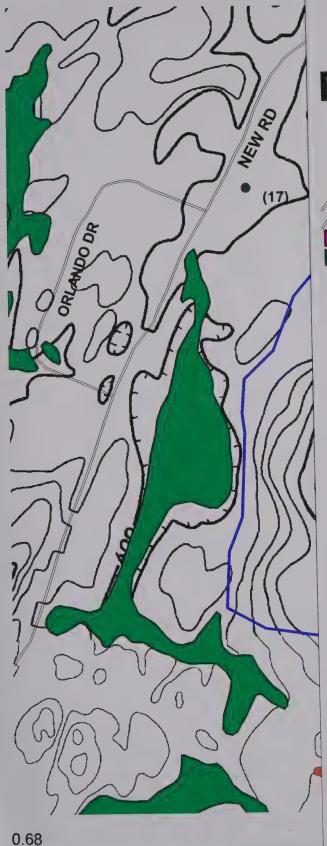


Drill Holes (Depth to rock)
 Seismic Tests (Depth to rock)
 Orange County Roads
 Region 8 Rts.
 Orange County Wetlands (DEC)



Figure 1 Rock Outcrop Map Barron Rd. Site





Ridge Road Site

Drill Holes (Depth to rock)
Seismic Tests (Depth to rock)
Orange County Roads
Region 8 Rts.

Rock Outcrop Area (Ridge Road)
Orange County Wetlands

Figure No. 2 RockOutcrop Map



1.36 Miles





Ridge Road Site

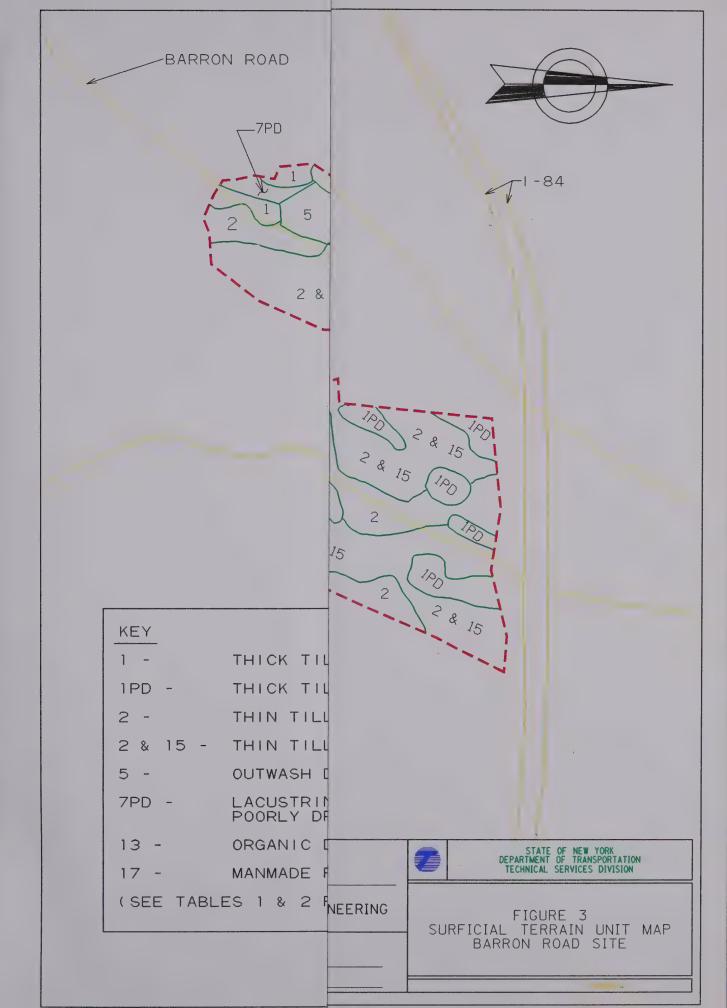
- Drill Holes (Depth to rock)
 Seismic Tests (Depth to rock)

 // Orange County Roads
 // Region 8 Rts.
- Rock Outcrop Area (Ridge Road) Orange County Wetlands

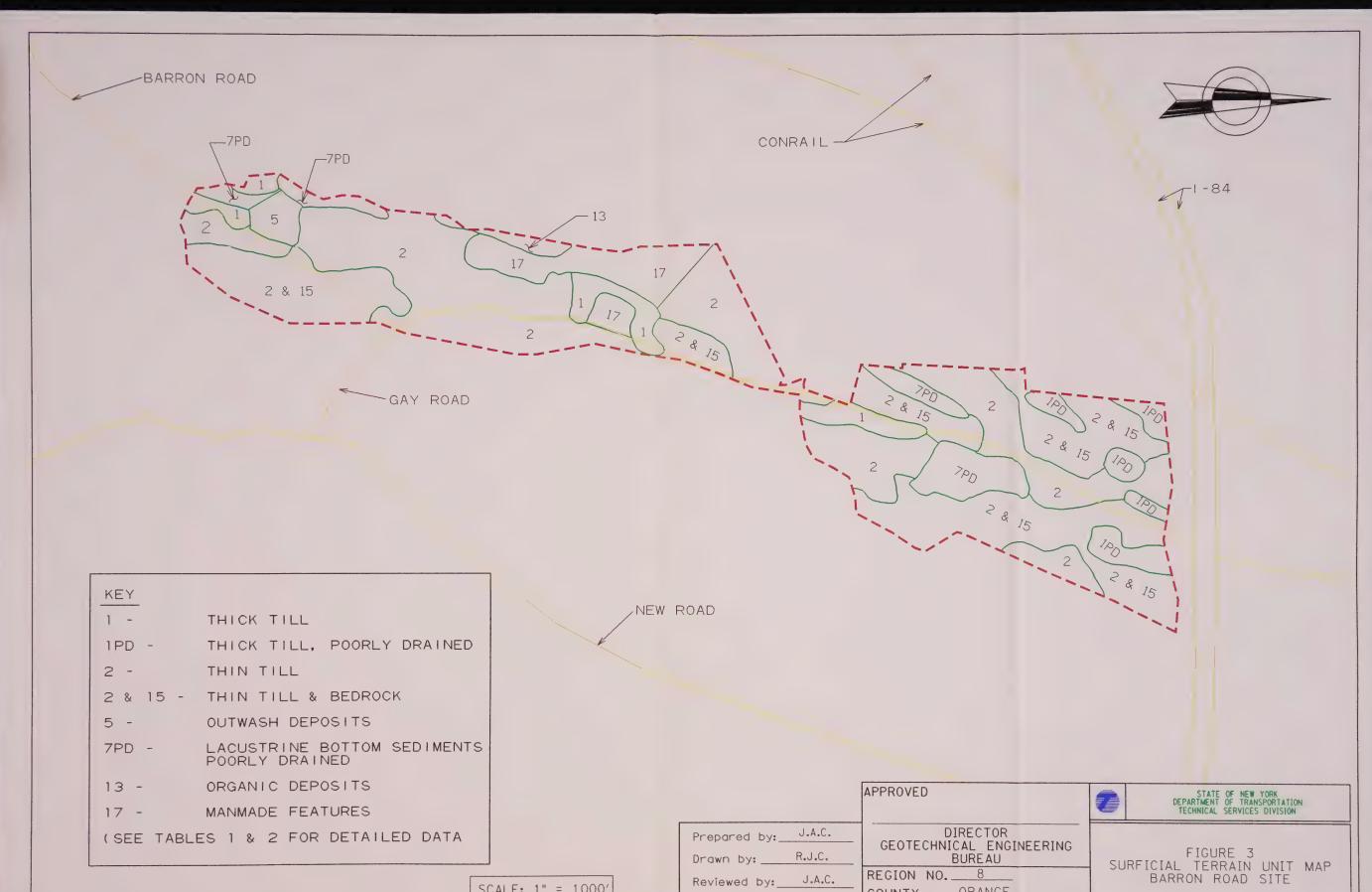
Figure No. 2 RockOutcrop Map











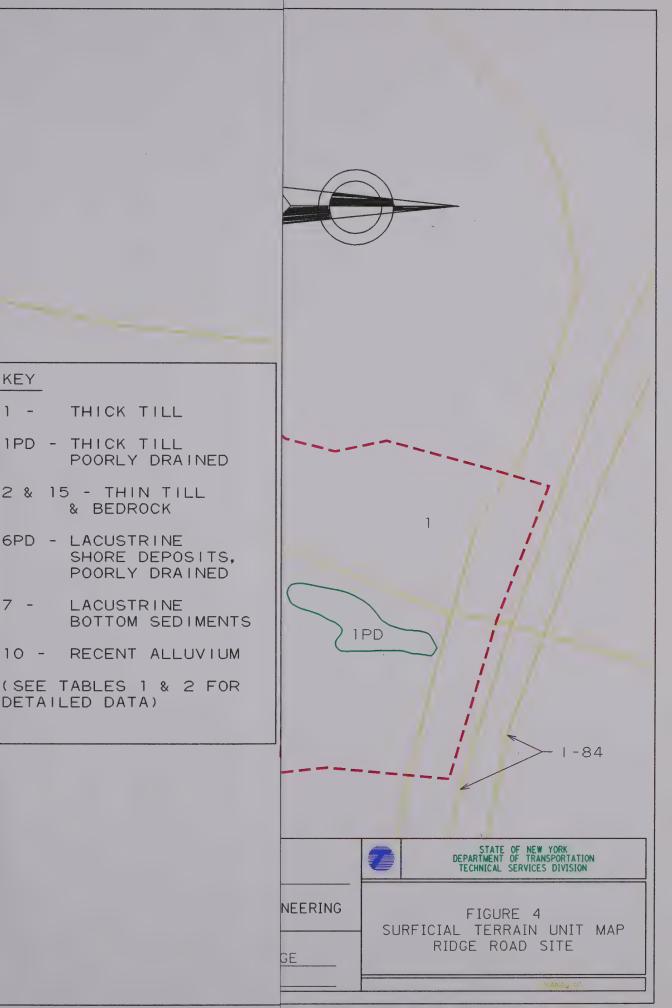
Checked by:__

COUNTY: ORANGE

DWG. NO._

SCALE: 1" = 1000'





KEY

THICK TILL

POORLY DRAINED

SHORE DEPOSITS, POORLY DRAINED

LACUSTRINE

1PD - THICK TILL

6PD - LACUSTRINE

DETAILED DATA)

2 & 15 - THIN TILL & BEDROCK



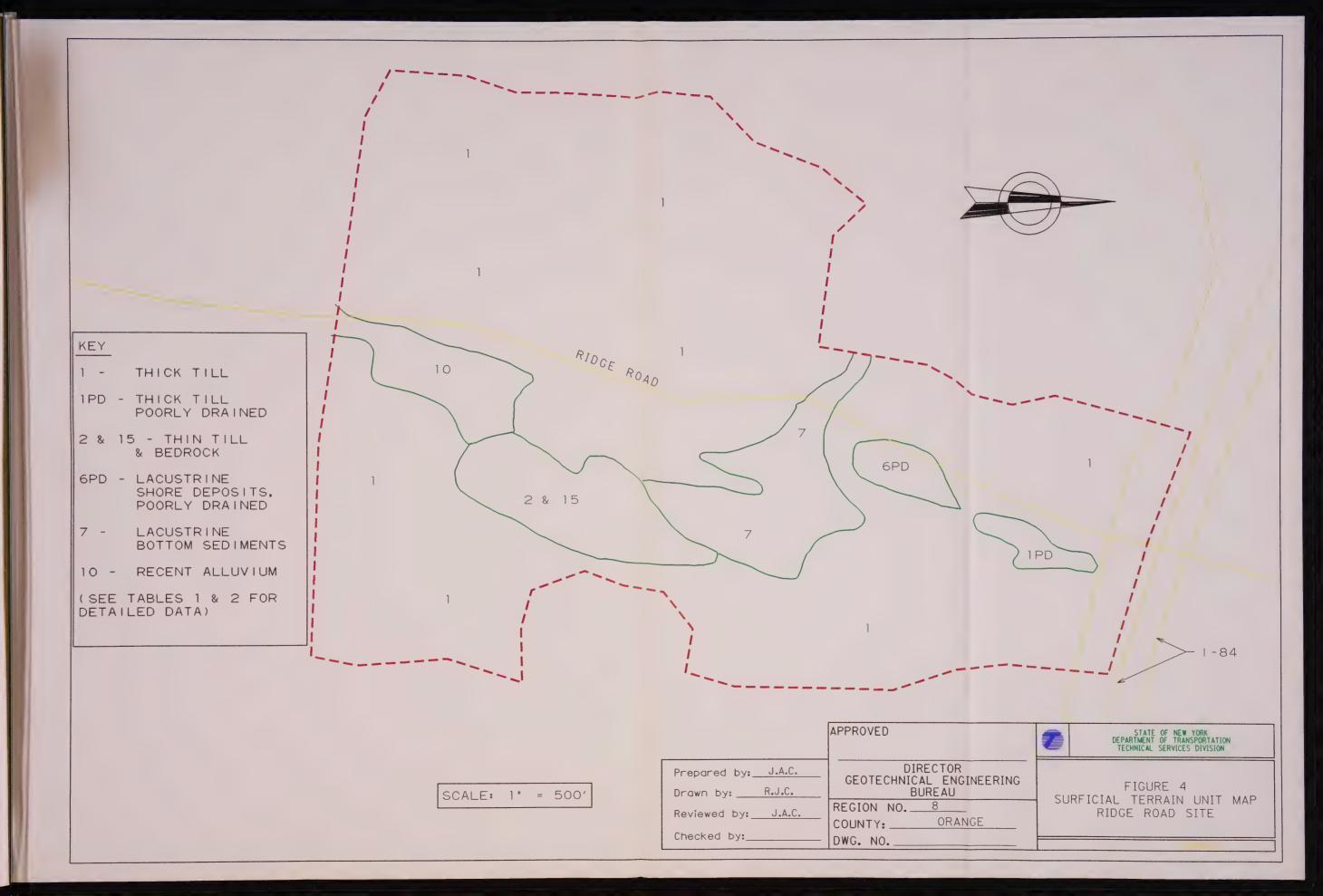




TABLE 1

GENERAL TERRAIN UNIT CHARACTERISTICS

	THE	ROL	E H	ıc	DI .
REMARKS	HARD LAYER NEAR THE SURFACE MAY PREVENT DOWNWARD MOVEMENT OF WATER.	DEPTH TO BEDROCK LESS THAN FOUR FEET. NUMEROUS ROCK FRAGMENTS NEAR BEDROCK SURFACE. THE UNDERLYING BEDROCK MAY CONTROL THE LANDFORM.	OUTCROPPING OF BEDROCK WILL OCCUR. SEE THE INDIVIDUAL EXPLANATION FOR THIN TILL.	MOSTLY NON-PLASTIC	MOSTLY NON-PLASTIC MAY OVERLIE SILT AND CLAY OR TILL.
RELATIVE PERMEABILITY	VERY SLOW TO RAPID.	VERY SLOW TO RAPID.	SLOW TO RAPID.	MODERATE TO VERY RAPID.	MODERATELY SLOW TO RAPID.
PARTICLE SIZE AND DISTRIBUTION	CLAY TO BOULDERS, GENERALLY UNSORTED AND UNSTRATIFIED. THE SOILS VARY IN COMPOSITION ACCORDING TO THE ROCK FROM WHICH THEY WERE DERIVED.	CLAY TO BOULDERS, GENERALLY UNSORTED AND UNSTRATIFIED MINOR WATER SORTED POCKETS. THE SOILS VARY IN COMPOSITION ACCORDING TO THE ROCK FROM WHICH THEY WERE DERIVED.	SEE INDIVIDUAL EXPLANATION FOR THIN TILL.	CLAY THROUGH COBBLES, SAND AND GRAVEL PREDOMINATE. WELL-SORTED, MASSIVE, NEARLY HORIZONTAL STRATIFICATION.	CLAY THROUGH COBBLES, SILT AND SAND PREDOMINATE. WELL-SORTED BEDS. NEARLY HORIZONTAL, DISTINCT STRATIFICATION.
COMMON TOPOGRAPHIC POSITION	TILL PLAINS, FLANKS AND TOPS OF HILLS.	TILL PLAINS, INCISED DRAINAGE WAYS, FLANKS AND TOPS OF HILLS.	STREAM CHANNELS, FLAT PLAINS.	LOWER VALLEY WALLS AND FLOORS.	HIGH ON VALLEY WALLS, EDGE OF VALLEY FLOORS. EDGES OF LOWLANDS.
LANDFORM	NEARLY LEVEL TO STEEP SLOPES.	NEARLY LEVEL TO MODERATELY STEEP. TILL PLAINS AND VALLEY SIDES. LANDFORMS MAY BE BEDROCK CONTROLLED.	THE BEDROCK UNDERLIES AND CONTROLS THE SURFACE.	FLAT TO GENTLY UNDULATING TERRACES AND PLAINS.	DELTAS, BEACHES AND BARS. FLAT TO GENTLY UNDULATING PLAINS.
MODE OF ORIGIN	SEDIMENTS PICKED UP, TRANSPORTED, MIXED, AND DEPOSITED BY GLACIAL ICE, MINIMAL WATER TRANSPORT. COMPACTION BY OVERRIDING ICE OR SETTLING DURING DEWATERING.	SEDIMENTS PICKED UP, TRANSPORTED MIXED, AND DEPOSITED BY GLACIAL ICE, MINIMAL WATER TRANSPORT. COMPACTION BY OVERRIDING ICE OR SETTLING DURING DEWATERING.	SEE INDIVIDUAL EXPLANATIONS FOR THIN TILL AND BEDROCK UNITS.	SEDIMENTS TRANSPORTED BY MELTWATERS AWAY FROM ICE MASS.	SEDIMENTS TRANSPORTED BY WATER COURSES FLOWING INTO GLACIAL LAKES AND SETTLING. WAVE ACTION ALONG SHORES.
TERRAIN UNITS	THICK TILL	THIN TILL	THIN TILL & BEDROCK	OUTWASH DEPOSITS	LACUSTRINE SHORE DEPOSITS
SYMBOL	н	И	2 & 15	រភ	Ф



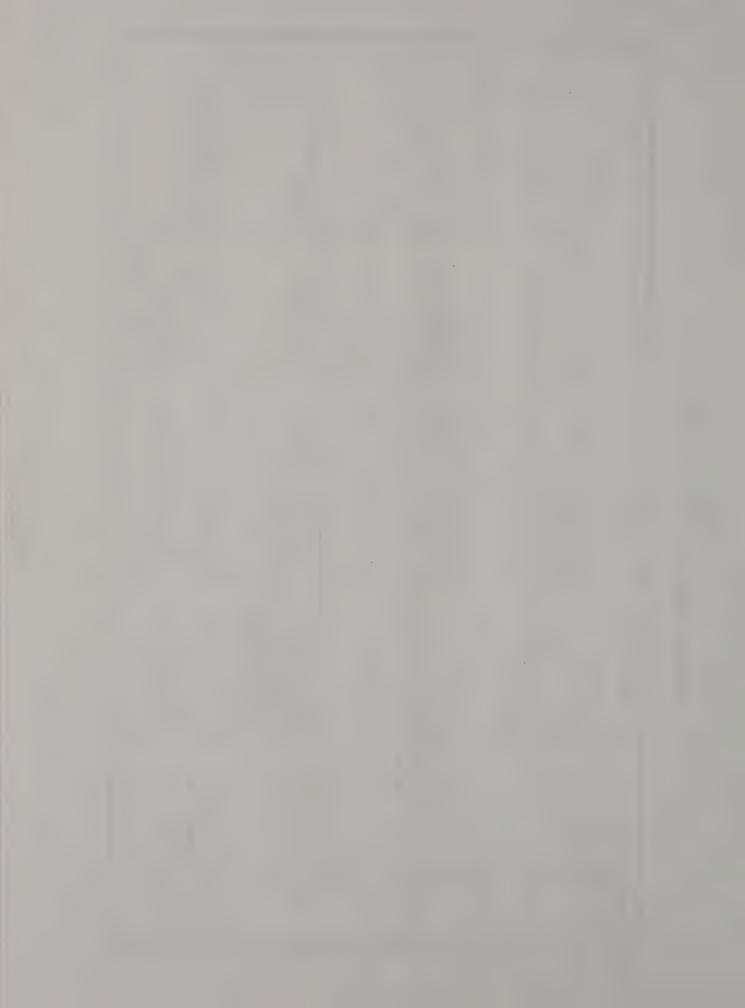
SYMBOL	TERRAIN UNITS	MODE OF ORIGIN	LANDFORM	COMPON TOPOGRAPHIC POSITION	PARTICLE SIZE AND DISTRIBUTION	RELATIVE PERMEABILITY	REMARKS
٢	LACUSTRINE BOTTOM SEDIMENTS	SEDIMENTS DEPOSITED IN DEEP, QUIET WATER OF GLACIAL LAKES.	FLAT TO GENTLY UNDULATING PLAINS.	ON KNOBS AND DEPRESSIONS OF VALLEY FLOORS AND LOWLANDS.	CLAY TO FINE SAND, MOSTLY SILT AND CLAY. WELL-SORTED BEDS. NEARLY HORIZONTAL, DISTINCT STRATIFICATION.	VERY SLOW VERTICALLY, SLOW HORIZONTALLY.	LAMINATIONS COMMONLY CALLED VARVES. HIGHLY PLASTIC.
10	RECENT ALLUVIAL DEPOSITS	SEDIMENTS DEPOSITED BY FLOOD WATER.	FLOOD PLAINS SUBJECT TO OVERFLOW.	ALONG WATER- COURSE.	CLAY TO COBBLES, THE TEXTURE OF THESE SOILS VARY BOTH HORIZONTALLY AND VEFLECT THE CHARACTERISTICS OF THE PARENT MATERIAL. COARSER MATERIAL USUALLY NEAREST CHANNEL AND BECOMING FINER TOWARDS EXTREMITIES.	VARIABLE.	USUALLY UNDERLAIN BY ADJACENT DEPOSITS. MAY BE PLASTIC. HIGH WATER TABLE.
13	ORGANIC DEPOSITS	ACCUMULATION OF ORGANIC AND INORGANIC MATERIAL IN BODY OF WATER.	DEPRESSIONS.	ALONG WATER- COURSES. HEADWATER OF UPLAND STREAMS, VALLEY FLOOR DEPRESSIONS.	CLAY TO FINE SAND AND ORGANIC MATTER, UNSORTED. IRREGULAR STRATIFICATION.	VARIABLE, HIGH WATER TABLE.	PLASTICITY VARIES. DEPTH TO MINERAL SOLI VARIES, BUT MAY EXTEND TO SOME DEPTH.
15	BEDROCK	THE MODE OF ORIGIN AND TYPE OF BEDROCK VARY CONSIDERABLY WITHIN THE REGION. PROJECTS WILL REQUIRE INDIVIDUAL INVESTIGATION.	UNDERLIES AND CONTROLS THE SURFACE OF LARGE FEATURES.	STEEPER PORTIONS OF VALLEY SLOPES, INCISED DRAINAGEWAYS, STEEP CLIFFS, LARGE FLAT AREAS.		VARIABLE. DEPENDS ON ROCK TYPE, JOINTS, FRACTURES, ETC.	MAY BE MAPPED IN COMBINATION WITH THIN TILL.
17	MAN-MADE FEATURES		EXCAVATED, FILLED OVER OR OTHERWISE MODIFIED.	NO LONGER DISPLAYS THE IDENTIFYING NATURAL TOPOGRAPHIC FEATURES.			PROBABLY SIMILAR TO SOLIS OF THE ADJACENT MAJOR TERRAIN UNITS.
PD	POORLY DRAINED			THESE ARE POORLY DRAI UNITS. THEY ARE SIMI UNIT EXCEPT THAT THE THE TIME. THESE SOIL THE LATE FALL, WINTER REMAINS NEAR THE SURE DRY MONTHS.	THESE ARE POORLY DRAINED PHASES OF THE ABOVE TERRAIN UNITS. THEY ARE SIMILAR IN CHARACTER TO THE DESCRIBED UNIT EXCEPT THAT THE SOIL REMAINS WET FOR A LARGE PART OF THE TIME. THESE SOILS ARE USUALLY WATER LOGGED DURING THE LATE FALL, WINTER AND EARLY SPRING. THE WATER TABLE REMAINS NEAR THE SURFACE EXCEPT DURING THE USUALLY WARM, DRY MONTHS.		



TABLE 2

GENERAL EARTH ENGINEERING CONSIDERATIONS

SOURCE OF MATERIALS	COMMON BORROW.	COMMON BORROW. MAY BE WET.	COMMON BORROW. LOW SOIL YIELD.	COMMON BORROW. LOW SOIL YIELD.	COMMON BORROW AND GRANULAR MATERIALS.	COMMON BORROW. MAY BE OVER OPTIMUM MOISTURE CONTENT.
SUBGRADE CONDITIONS	GENERALLY GOOD.	MAY BE WET.	ROCK MAY BE ENCOUNTERED. TRANSITION SECTIONS NECESSARY.	ROCK USUALLY ENCOUNTERED. TRANSITION SECTIONS NECESSARY.	GENERALLY GOOD. MAY BE NON-UNIFORM.	SOFT, FINE-GRAINED MATERIAL. WET WITH DEPTH. POSSIBLE TRAFFICABILITY DIFFICULTIES. CONSIDER UNDERCUT.
CUTSLOPE CONDITIONS	POSSIBILITY OF SURFACE SEEPAGE AND SLOUGHING. MAY REQUIRE SLOPE PROTECTION.	SEEPAGE AND SLOUGHING PROBABLE, MAY REQUIRE SLOPE PROTECTION.	ROCK OR EARTH-ROCK COMBINATIONS. ROCK EXCAVATION MAY BE REQUIRED.	ROCK OR EARTH-ROCK COMBINATIONS. ROCK EXCAVATION MAY BE REQUIRED.	GENERALLY GOOD. POSITIVE DRAINAGE MAY BE REQUIRED TO PREVENT EROSION.	GENERALLY POOR. PROBLEMS OF EROSION OF FINE-GRAINED MATERIALS. MAY REQUIRE SLOPE PROTECTION OR FLATTENING FOR STABILITY.
HIGHWAY LOCATION	NOT CRITICAL.	GENERALLY NOT CRITICAL. CUTS MAY BE WET.	NOT CRITICAL.	NOT ADVISABLE.	GENERALLY NOT CRITICAL. FOUNDATIONS FOR EMBANKWENTS OVER 25 FEET HIGH MAY BE UNSTABLE IF UNDERLAIN BY WEAKER DEPOSITS.	FOUNDATIONS FOR EMBANKMENTS OVER 25 FEET HIGH PROBABLY UNSTABLE. CUTS WILL BE TROUBLESOME.
TERRAIN UNIT	THICK TILL	THICK TILL POORLY DRAINED	THIN TILL	THIN TILL AND BEDROCK	OUTWASH DEPOSITS	LACUSTRINE SHORE DEPOSITS
MAP SYMBOL	1	1PD	2	2 & 15	ഗ	υ



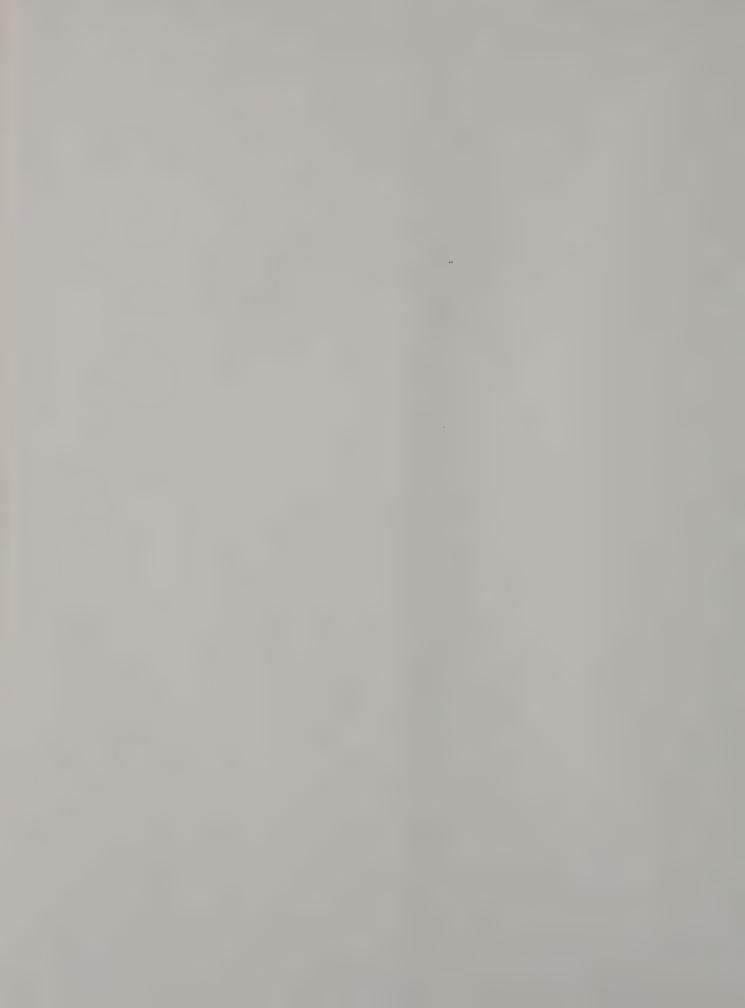
MAP SYMBOL	TERRAIN UNIT	HIGHWAY LOCATION	CUTSLOPE CONDITIONS	SUBGRADE CONDITIONS	SOURCE OF MATERIALS
6PD	LACUSTRINE SHORE DEPOSITS POORLY DRAINED.	FOUNDATIONS FOR EMBANKWENTS OVER 25 FEET HIGH PROBABLY UNSTABLE. CUTS WILL BE TROUBLESOME.	GENERALLY POOR. PROBLEMS OF FINE-CRAINED FLOWING MATERIALS. WILL REQUIRE SLOPE PROFECTION AND FLATTENING FOR STABILITY.	WET, SOFT, FINE-GRAINED MATERIALS. TRAFFICABILITY DIFFICULTIES POSSIBLE. CONSIDER UNDERCUT.	COMMON BORROW. WILL BE WET.
7	LACUSTRINE BOTTOM SEDIMENTS	FOUNDATIONS FOR EMBANKMENTS 25 FEET HIGH PROBABLY UNSTABLE. CUTS WILL BE TROUBLESOME.	GENERALLY POOR. PROBLEMS OF FINE-CRAINED FLOWING MATERIALS. MAY REQUIRE SLOPE PROTECTION AND FLATTENING FOR STABILITY.	FINE-GRAINED MATERIALS MAY BE SOFT AND WET. TRAFFICABILITY DIFFICULTIES POSSIBLE. CONSIDER UNDERCUT.	COMMON BORROW. MAY BE OVER OPTIMUM MOISTURE CONTENT.
720	LACUSTRINE BOTTOM SEDIMENTS POORLY DRAINED	FOUNDATIONS FOR EMBANKWENTS 25 FEET HIGH PROBABLY UNSTABLE. CUTS WILL BE TROUBLESOME.	GENERALLY POOR. PROBLEMS OF FINE-CRAINED FLOWING MATERIALS. MAY REQUIRE SLOPE PROTECTION AND FLATTENING FOR STABILITY.	WET, SOFT, FINE-GRAINED MATERIALS. TRAFFICABILITY DIFFICULTIES, CONSIDER UNDERCUT.	COMMON BORROW. MAY BE OVER OPTIMUM MOISTURE CONTENT.
10	RECENT ALLUVIAL DEPOSITS	LOCATE ABOVE EXPECTED HIGH WATER ELEVATION. FOUNDATIONS FOR EMBANKMENTS OVER 25 FEET HIGH MAY BE UNSTABLE. CUTS NOT ADVISABLE.	WATER PROBLEMS.	NON-UNIFORM. HIGHLY VARIABLE MATERIALS. MAY BE WET.	COMMON BORROW. MAY BE OVER OPTIMUM MOISTURE CONTENT.
13	ORGANIC DEPOSITS	LOCATE ABOVE EXPECTED HIGH WATTER ELEVATION. CUTS NOT ADVISABLE.	WATER PROBLEMS.	UNSUITABLE MATERIAL. MUST BE REMOVED AND REPLACED.	NOT SUITABLE.
17	MAN-MADE FEATURES	NO ENGINEERING INTER	NO ENGINEERING INTERPRETATIONS ARE POSSIBLE WITHOUT SPECIFIC INFORMATION.	CIFIC INFORMATION.	v



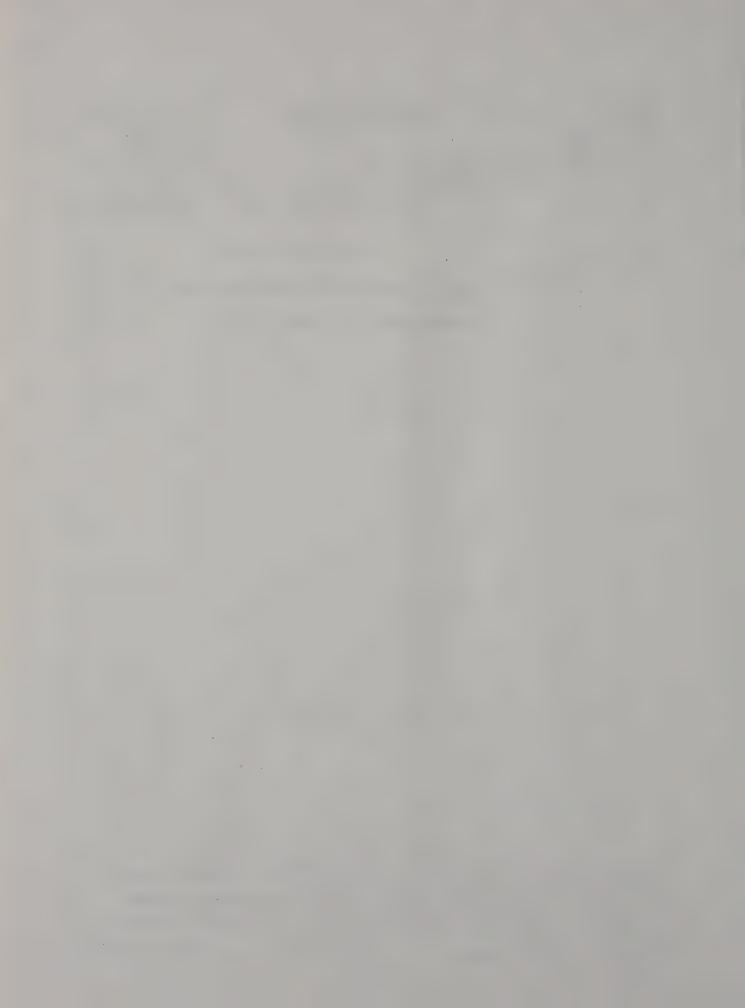
DRILL LOGS

SUPER COLLIDER - NEWBURGH SITE (EAST)

P.I.N. A030.00.701



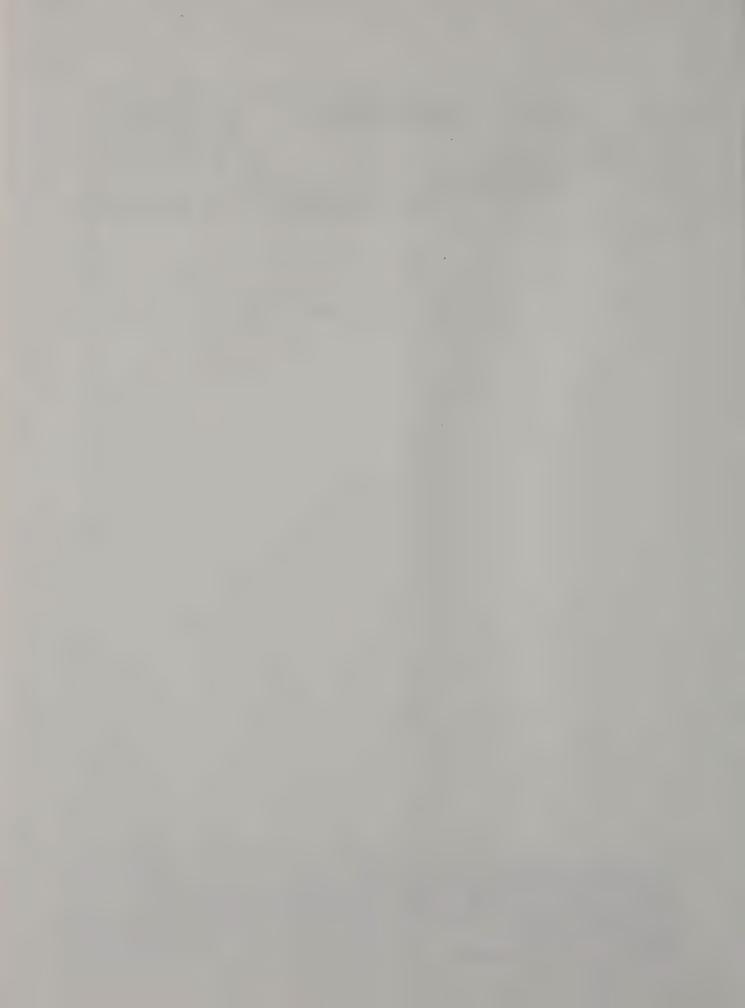
	66 :0N _ :TY _	47 ORA			NUM	10	1 DEPARTMENT GEOTECHNICAL	OF NEW YORK OF TRANSPORTATION ENGINEERING BUREAU EXPLORATION LOG		HOLE LINE STA	DN-X-N1 E.O.P SEE MAP	01
		AØ:				0 -	 NEWBURGH SITE (EAS)	T)	CII	OFFSET		
		ATE L								RF. ELEV. PTH TO WA		Ft.
					DAT	E S	TART 11-MAY-87	DATE FINISH				
CASIN		0. D. 4 0. D. 3				. D. 4		OF HAMMER-CASING OF HAMMER-SAMPLER			FALL-SAMPLE	
DEPTH ft BELOW SURFACE	BLOWS ON	SAMPLE NO.	8	SAM	US OF	?		DESCRIPTION OF S	DIL AND RO	ЭСК		MDIST CONT.
0.0	4	J1	P P	1.0	1.5	2.8	Light Brown Clayey % Of Gravel	SILT , Sandy W/R	oot Fibers	s & Small	(M-LPL)	2.2
-	5	J2	P	4	1.5		Brown Sandy GRAVEL	,Silty, W∕Small	% Of Clay		(M-LPL)	12
-	35				15				••••••		•	
5. 0	18	J3_	10	Ь	6		Brown Gravelly SAN	D ,Silty			(M-NPL)	14
-	14											
10.0	18											
	2											
	10											
15.0	53	Ј4	3	7	13		Brown Gravelly SIL1	, Sand			(M-NPL)	19
	94									• • • • • • • • • • • • • • • • • • • •		
	86 105	R1					Run #1Mediiu					
20. <u>0</u>							RE					
=							ВО	TTOM OF HOLE AT				
FOR S AVAIL ACCES IT IS A SU JUDGE	ABLE S TO PRES BSTIT	DESI TO AU THE S SENTED TUTE OF SU	GN A THOR AME IN FOR	EIZED INFO I GOO INV	ESTII USI RMAT ID FA ESTII RIZE	MATE ERS ION ITH, GATI D US		DRILL RIG OPERATOR SOIL & ROCK DESCRI REG GEOTECHNICAL ENGINEER PHILLIP DATE APPROVED 19- STRUCTURE NAME NEW B.I.N. SHEET 1 OF 2	A. WALTON D. K JUL-95 RE J RD. 4100	BY JOHN C. EVISION #1 W OF JCT	REAGAN OF RIDGE RD.	1
CONTRA	T _			CONT	RACT	UR _		SHEET 1 OF 2		HULE	NIA Y-IATA	T



SM 282E (STATE	OF NEW YORK			The last state of	
PSN _		BORNUM	1 101		OF TRANSPORTATION ENGINEERING BUREAU		HOLE	DN-X-N10	1
REGION					EXPLORATION LOG		LINE _	E.O.P	
COUNTY							STA	SEE MAP	
PIN	A030.						OFFSET	10	
				RGH SITE (EAS	<u>5T) </u>		RF. ELEV		t
COORDI	NATE LOC.			AST			ש סד אדי	ATER 2	Ft.
		DA	TE START _	11-MAY-87	DATE FINISH _	11-MAY-8	37		
CASING	0. D. 4 1/		I.D. 4"		OF HAMMER-CASING	300 LBS		FALL-CASING	
SAMPLER	0. D. 3 1/		I.D. 3"	WEIGHT	OF HAMMER-SAMPLER	300 LD3	HAMMER	FALL-SAMPLER	16 INS
				ADDIT	ONAL NOTES				
			Surf	ace elevation	is based on USGS	topograph	ic map		
							`		
FOR STAT	TE DESIGN	AND EST	IMATE PURPO	EON WAS OBTAINED SES. IT IS MADE AT THEY MAY HAVE	SOIL & ROCK DESCR		ECKER IMMEL, J.	BOUCHARD	
ACCESS T	TO THE SAME RESENTED I	INFORMA N GOOD F	TION AVAILAB AITH, BUT IS	LE TO THE STATE. NOT INTENDED AS NTERPRETATION OF	ENGINEER PHILLIP DATE APPROVED 19	-JUL-95 RE	VISION #1		
	NT OF SUCH		ED USERS.		B. I. N. SHEET 2 OF 2			DN-X-N101	

CONTRACT

CONTRACTOR



SM 28: PSN REG	66	47	8	BOR	MUM	10	2 DEPARTMENT (GEOTECHNICAL	OF NEW YORK OF TRANSPORTATION ENGINEERING BUREAU EXPLORATION LOG	LI	NE E	ON-X-N1	02
	YTY _	ORA	ANGE		0.1		SODSORFACE	EXPLORATION LOG	ST		SEE MAP	
						R -	NEWBURGH SITE (EAST	-)		ELEV.		Ft.
COOF	RDINA	TE L	oc.					DATE ETAILER		TO WAT	ER <u>5</u>	Ft.
CASIN	1G (D. D. 2	7/8	3	I	. D. 2	TART 11-MAY-87	DATE FINISH DF HAMMER-CASING 31		 HAMMER FA	ALL-CASING	18 IN
SAMPL	ER C	D. D. 2			I	. D. 1		F HAMMER-SAMPLER 3			ALL-SAMPLE	
DEPTH ft BELOW SURFACE	Z 0 0 Z H S	SAMPLE NO.		SAN	WS 0	?		DESCRIPTION OF SOI	L AND ROCK			MOIST
DEP	BLOWS CASI?	A.	8	1/	1.0							(%)
0.0		J1	2		1. 3	2.0	Brown Sandy GRAVEL	,Silty W∕ Root Fi	ibers & Orga	inic	(M-NPL)	11
-	1	-	-	2	4							
-	3			_	4						• • • • • • • • • • • • • • • • • • • •	
_	4				-							
-	1	1	-	-	-		•••••					
_	2											
5.0	1										• • • • • • • • • • • • • • • • • • • •	
_		J2	10				Brown Clayey SILT,	Sandy & Silty Cla	y Gr W/ Sma	11 %	(M-LPL)	19
-	8		-	14	18		Of Gravel					
_	10						•••••					
_	24				-		•••••					
_												
-	20											,
10.0	27											· · · · · · · · · · · · · · · · · · ·
_	25	J3	5	7			Dark Brown Silty SA	ND , W/ Organic			(M-NPL)	2.2
_	23	J4		-			Gray Sandy SILT				(M-NPL)	19
_	45				9							
	40				3							
_	63											
_	0.5											
15.0	141									• • • • • • • • • • • • • • • • • • • •		
_	210											
_		J5	30	31			Gray Gravelly SAND	,Silt			(M-NPL)	8
-		81		71			BOULDER	2 0" 0"				
_							REL	00				
-		R1					Run #1	. SHALE				
20 0							REC	. 18" 33% 16 PI	ECES			
20.0								••••				
							••••••					
-						-						
-						\dashv						
							ВО	TTOM OF HOLE AT 23	ß Ft.	· (· · · · · · · · · · · · · · · · · ·		
FOR S AVAIL ACCES IT IS A SU	TATE ABLE S TO PRES	DESI TO AU THE S ENTED UTE	GN A THOR AME IN FOR	ND IZED INFO GOO INV	ESTII USI IRMAT ID FA 'ESTII	MATE ERS (ION A ITH, GATI(PURPOSES. IT IS MADE PURPOSES. IT IS MADE DALY THAT THEY MAY HAVE WAILABLE TO THE STATE. BUT IS NOT INTENDED AS DAS, INTERPRETATION OR	SOIL & ROCK DESCRIP REG GEOTECHNICAL ENGINEER PHILLIP A. DATE APPROVED 19-JU STRUCTURE NAME NEW 1	TION <u>D. KIMM</u> . WALTON BY J JL-95 REVIS RD. 2300' W C	OHN C. RE	EAGAN	
		OF SU					RS.	B. I. N			V-V-N11 0	2
CONTRA	ACT _			CONT	RACT	DR _		SHEET 1 OF 2	H	OFF N	V-X-N10	4



SM 282E (2/76)	DODAHIM 4.02		OF NEW YORK		UOL F	DN-X-N	102
PSN 6647 REGION 8	BORNUM 102		F TRANSPORTATION ENGINEERING BUREAU		HOLE	E. O. P	102
REGION 8 COUNTY ORANG	SE	SUBSURFACE	EXPLORATION LOG		STA:	SEE MAP	
	00.701			•	OFFSET	5	
	COLLIDER - NEWBU		")		SURF. ELEV		Ft.
COORDINATE LOC.		41-MAY-87	DATE EINIGH		DEPTH TO W	ATER 5	Ft.
ASING 0.D. 2 7	DATE START _ /8" I.B. 2 1/4"	11-MAY-87	DATE FINISH DF HAMMER-CASING	11-MA		FALL-CASIN	C 49 TA
SAMPLER O.D. 2"	" I. B. 1 1/2"		F HAMMER-SAMPLER			FALL-SAMPL	
		ADDITIO	NAL NOTES				
	Surfa	ace elevation i	s based on USGS	topogra	phic map		
					•		
		CON MAC ORTAINED	DOTAL DIC ODERATO		LUNIDEN		
	NFORMATION SHOWN HER I AND ESTIMATE PURPO		DRILL RIG OPERATO	IPTION D	. LUNDEN	BOUCHARD	
AVAILABLE TO AUTH	HORIZED USERS ONLY TH	AT THEY MAY HAVE	REG GEOTECHNICAL				
ACCESS TO THE SAM	E INFORMATION AVAILAB IN GOOD FAITH, BUT IS	LE TO THE STATE.	ENGINEER PHILLIP				
A SUBSTITUTE FO	IN GUOD FAITH, BUT IS R INVESTIGATIONS, I FAUTHORIZED USERS.	NTERPRETATION OR	STRUCTURE NAME NE	W RD. 231).
CONTRACT	CONTRACTOR		SHEET 2 OF 2		HOLE	DN-X-N1	02



SM 282	E (2/7	6)				STATE	OF NEW YORK				
PSN			BOI	RNUM _	10] DEPARTMENT	OF TRANSPORTATION ENGINEERING BUREAU		HOLE		3
REGI	-		3				EXPLORATION LOG			BASE LINE	
COUN						7-446				SEE MAP	
			0.00.						OFFSET		
						NEWBURGH SITE (EAS	51)	-	SURF. ELEV.		Ft.
COUR	NINH	ie Li)C				DATE STATEL		DEPTH TO WA	TER Z	Ft.
CASIN		. D. 1				ART 15-MAY-87	DATE FINISH OF HAMMER-CASING 41			CALL CASTNIC	4 5 74 15
SAMPLI				I.			OF HAMMER-SAMPLER		HAMMER		
4	7		T								
÷ 3 11	وة	ш		DWS ON							
BELOW SURFACE	SH	SAMPL NO.	SA	MPLER			DESCRIPTION OF SOI	I AND	ROCK		MOIST.
DEPT BEL SURF	CAS	4	0 .5	1. 8	1.5		22001121 12011 01 000				CONT.
<u> </u>	I E	0)	.5 1.	0 1.5	2.0						(%)
0.0							, W∕ Root Fibers & F	Pieces	Of Wood And	M-NPL)	
	12	7.4		-		Org					37
	17	J1		-		***************************************					31
-				-		***************************************	• • • • • • • • • • • • • • • • • • • •				
	20					*****************************					
						Gray Silty SAND ,	Clayey W/ Root Fibe	r 5		(M-LPL)	
_	32										
5.0	97	J2									17
۵. و	31	32				•••••					¥[
	139			1							
						••••••					
	145										
	457	J3		1	_	Gray Silty SAND				(M-NPL)	15
-	153				-						
_1			1		1		BOTTOM OF HOLE AT 8				
						· ·	DOTTOR OF HOLE AT U				

Surface elevation is based on USGS topographic map

THE SUBSURFACE INFORMATION SHOWN HEREON WAS OBTAINED	DRILL RIG OPERATOR C. LUNDEN
FOR STATE DESIGN AND ESTIMATE PURPOSES. IT IS MADE	
AVAILABLE TO AUTHORIZED USERS ONLY THAT THEY MAY HAVE	
ACCESS TO THE SAME INFORMATION AVAILABLE TO THE STATE.	ENGINEER PHILLIP A. WALTON BY JOHN C. REAGAN
IT IS PRESENTED IN GOOD FAITH, BUT IS NOT INTENDED AS	DATE APPROVED 19-JUL-95 REVISION #1
A SUBSTITUTE FOR INVESTIGATIONS, INTERPRETATION OR	STRUCTURE NAME WEED RD. 3000' W OF JCT OF RIDGE RD
JUDGEMENT OF SUCH AUTHORIZED USERS.	B. I. N.
CONTRACTCONTRACTOR	SHEET 1 OF 1 HOLE RP103



SM 2828	664	16)		BORI	VUM	10	STATE OF NEW YORK DEPARTMENT OF TRANSPORTATIO GEOTECHNICAL ENGINEERING BUR	N		Н	DLE	RP	10	4
REGI	3N		3	20.11	1011								E LINE	
COUN.	_						- SUBSURFACE EXPLORATION I	_OG			TA			
PIN		A03		0.76	01		-				FSET		50	
PROJE						₹ -	NEWBURGH SITE (EAST)				ELEV		390	Ft.
COORI							EAST		_		TO W	_		Ft.
							ART 15-MAY-87 DATE FINISH		15-MA					
CASINO	0	. D. 1			I.	D. 7	8" WEIGHT OF HAMMER-CASIN	1G 4	0 LBS		HAMMER	FALL	-CASING	18 INS
SAMPLE	R O	. D.			I.	D.	WEIGHT OF HAMMER-SAMPL	.ER	LBS		HAMMER	FALL	-SAMPLE	R INS
ACE A	Z O N	LE J.			JS ON PLER	1								MOIST.
DEPTH BELOU SURFA	BLOWS	SAMPL NO.	8	/	1.0		DESCRIPTION O	F 50I	IL ANI	ROCK				CONT. (%)
0.0							Gray Brown Silty SAND , Clayey W	ith/	Root	Fiber	5	(M-LPL)	
	12													
4	1 7	7.4												74
-	11	J1												Z4
-	15		-											
-	13_						Gray Silty SAND , With/ Small % Of Gravel (M-NPL							
	13													
	2.0													
5.0	20	J2												1 4
+	26	32												14
+	20						***************************************							• • • • • • • • • • • • • • • • • • • •
	69								· · · · · · · · · · · ·					
									·	·	-			
	99												l	
							BOTTOM OF HOLE	AT 7	7.2	Ft.				

THE SUBSURFACE INFORMATION SHOWN HEREON WAS OBTAINED FOR STATE DESIGN AND ESTIMATE PURPOSES. IT IS MADE SOIL & ROCK DESCRIP AVAILABLE TO AUTHORIZED USERS ONLY THAT THEY MAY HAVE ACCESS TO THE SAME INFORMATION AVAILABLE TO THE STATE. IT IS PRESENTED IN GOOD FAITH, BUT IS NOT INTENDED AS A SUBSTITUTE FOR INVESTIGATIONS, INTERPRETATION OR STRUCTURE NAME WEED JUDGEMENT OF SUCH AUTHORIZED USERS.

CONTRACTOR

CONTRACT

DRILL RIG OPERATOR C. LUNDEN

SOIL & ROCK DESCRIPTION D. KIMMEL, J. BOUCHARD

REG GEOTECHNICAL

ENGINEER PHILLIP A. WALTON BY JOHN C. REAGAN

DATE APPROVED 19-JUL-95 REVISION #1

STRUCTURE NAME WEED RD. 3000 W OF JCT OF RIDGE RD.

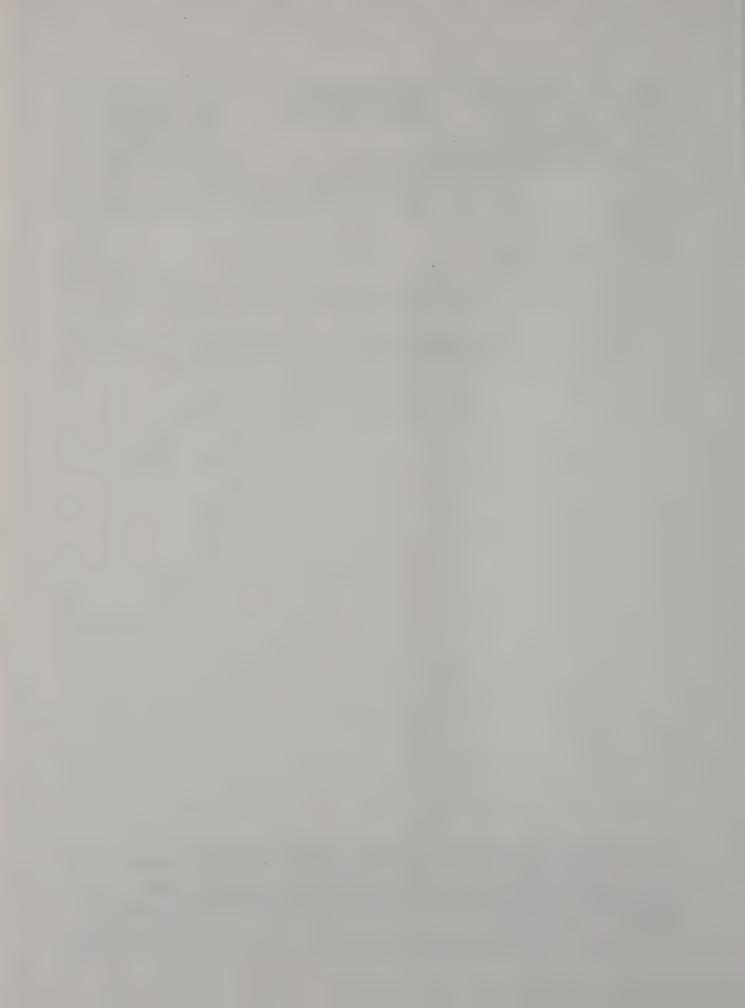
B. I.N.

SHEET 1 OF 1

HOLE RP- -104

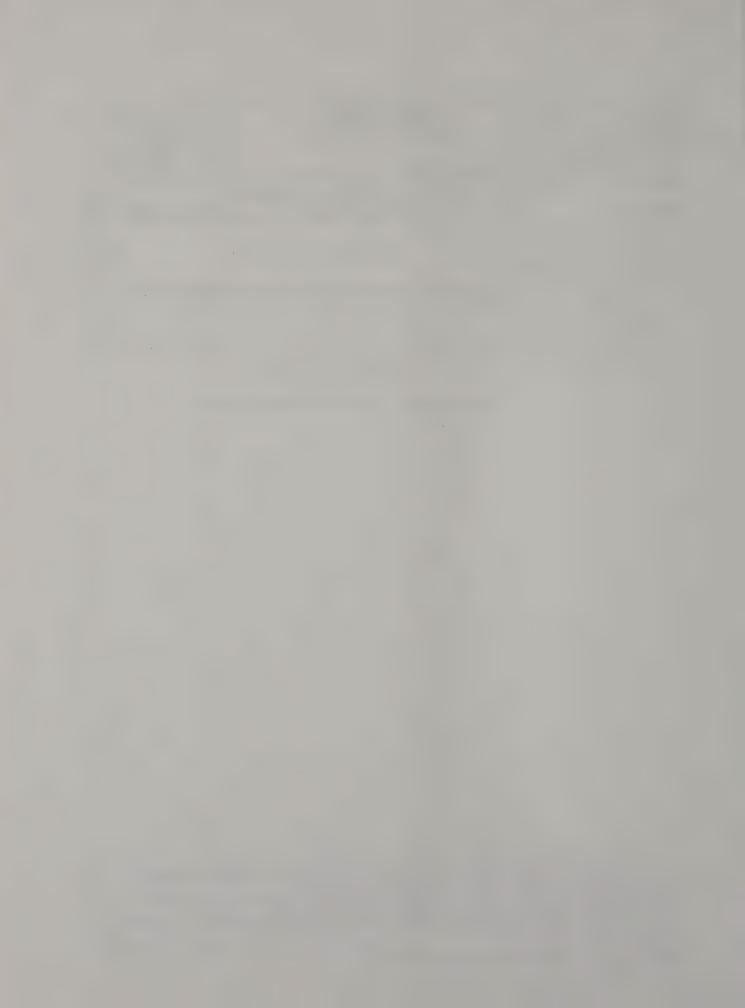


SM 282E (2/76) PSN _6647 BORNUM _10 REGION 8	5 DEPARTMENT (GEDTECHNICAL	OF NEW YORK OF TRANSPORTATION ENGINEERING BUREAU		HOLE	RP10 BASE LINE	
COUNTY ORANGE	SUBSURFACE	EXPLORATION LOG		STA	SEE MAP	
PIN A030.00.701 PROJECT SUPER COLLIDER -	MEMBERGON CITE (EAC)	• •	CUO	OFFSET	150 390	Ft.
COORDINATE LOC. (A) NORTH		,	traditions.		TER NONE	rt.
DATE S	TART 15-MAY-87		15-MAY-8			
CASING D.D. 1" I.D. 7 SAMPLER D.D. I.D.		OF HAMMER-CASING 4	LBS LBS		FALL-SAMPLE	
BLOWS ON SAMPLER 1 0 4 0 1 2 2 2 2 4 0 0 1 5 1 8 1 5 5 1 8 1 5 2 8 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	1	DESCRIPTION OF SO	IL AND ROO	СК		MOIST CONT.
0.0						
18 J1	Brown Silty SAND,	ight Brown Silty	S-A-N-D	. Clayey	(M-LPL)	38
40 J2 68	Light Brown Sandy		ray Brown	Silty	(M-LPL)	18
	В	TTOM OF HOLE AT	3.7 Ft.			
	Surface elevation i	s hased on USGS t	onnaranhi	r man		
				,		
THE SUBSURFACE INFORMATION SHOWN FOR STATE DESIGN AND ESTIMATE AVAILABLE TO AUTHORIZED USERS (ACCESS TO THE SAME INFORMATION A IT IS PRESENTED IN GOOD FAITH, A SUBSTITUTE FOR INVESTIGATIC JUDGEMENT OF SUCH AUTHORIZED USE CONTRACTOR	PURPOSES. IT IS MADE DALY THAT THEY MAY HAVE AVAILABLE TO THE STATE. BUT IS NOT INTENDED AS DAS, INTERPRETATION OR	DRILL RIG OPERATOR SOIL & ROCK DESCRIF REG GEOTECHNICAL ENGINEER PHILLIP A DATE APPROVED 19-3 STRUCTURE NAME WEEL B.I.N. SHEET 1 OF 1	PTION <u>D. KI</u> A. WALTON B TUL-95 RE	Y JOHN C. VISION #1 W OF JCT	REAGAN	



	BORNUM 106 E 00.701 COLLIDER - NEWI	DEPARTMENT (GEOTECHNICAL SUBSURFACE	OF NEW YORK OF TRANSPORTATION ENGINEERING BUREAU EXPLORATION LOG	SUE	LINE E	RP108 BASE LINE BEE MAP 100 390	Ft.
COORDINATE LOC.		EAST		_	TH TO WAT		
COSTNIC B B 4"	DATE START	15-MAY-87	DATE FINISH	15-MAY-8		N I -CAETNE	4 G TNI
CASING 0.D. 1" SAMPLER 0.D.	I. D. 778		F HAMMER-SAMPLER	LBS		ALL-CASING ALL-SAMPLER	
SURPTH SURPTH SPAPLE SAMPLE SAMPLE			DESCRIPTION OF SO		CK mall % Df	(M-NPL)	MOIST CONT. (%)
28 J1 26	نقلة التقلق ووجوع وتحصور والمنادي	avel					13
		R	OTTOM OF HOLE AT	2.8 Ft.			
	Sur	face elevation i	s based on USGS t	topographi	ic map		
					3		
FOR STATE DESIGN AVAILABLE TO AUTHO ACCESS TO THE SAME IT IS PRESENTED I	FORMATION SHOWN H AND ESTIMATE PUR RIZED USERS ONLY INFORMATION AVAIL- N GOOD FAITH, BUT INVESTIGATIONS, AUTHORIZED USERS.	POSES. IT IS MADE THAT THEY MAY HAVE ABLE TO THE STATE. IS NOT INTENDED AS	DRILL RIG OPERATOR SOIL & ROCK DESCRI REG GEOTECHNICAL ENGINEER PHILLIP DATE APPROVED 19- STRUCTURE NAME WEE B.I.N. SHEET 1 OF 1	PTION D. K A. WALTON JUL-95 RE D RD. 2800	BY JOHN C. R	EAGAN DF RIDGE RD	

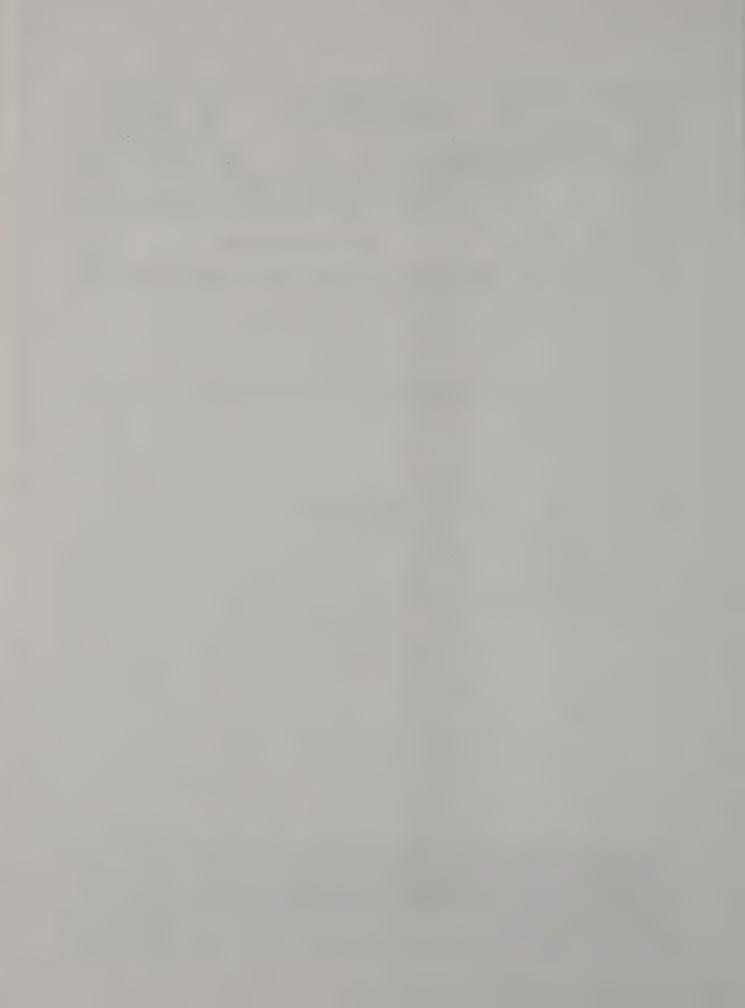
CONTRACT _



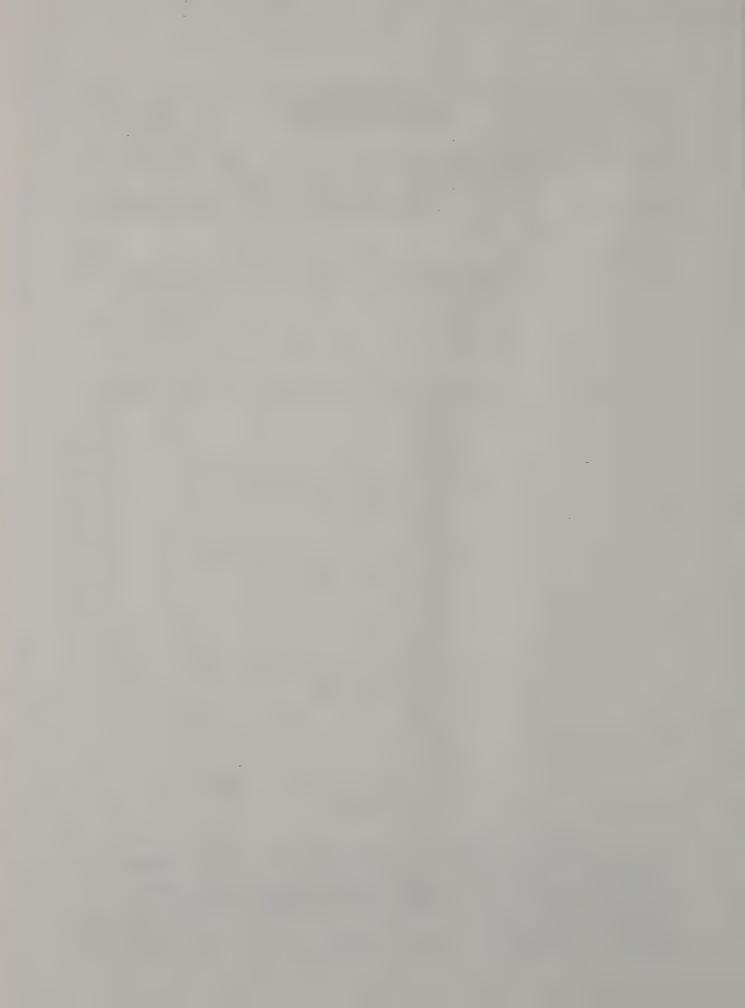
SM 282 PSN	_ 66·	76) 47		BOR	NUM	10	7 DEPARTMENT C	F TRANSPORTATION	HOLE	DN-X-N1	07
REGI	ION _		8					ENGINEERING BUREAU EXPLORATION LOG	LINE	E. O. P	
COUN	YTY _	ORA	ANGE					EXPEDITATION EGG		SEE MAP	
		A03					_		OFFSET		
							NEWBURGH SITE (EAST		BURF. ELEV.		Ft.
COOR	RDINA	TE L	oc.	(6					DEPTH TO WA	ATER 2	Ft.
								DATE FINISH 12-MAY			
CASIN). D. 2). D. 2		3				F HAMMER-CASING 300 LBS F HAMMER-SAMPLER 300 LBS		FALL-SAMPLE	
J	1	7					172 WE10111 B	THE TEXT SHEET STOP END	11-11-11-12-12	PACE SAMPLE	10 114
1 3 U	Zgg	ш			NS O						
DEPTH BELOW	BLOWS	SAMPLE NO.		SAM	IPLE	₹	1	ESCRIPTION OF SOIL AND	ROCK		MOIST
E 8 8	l o e	4	8	1.5/	1.0	1.5					(%)
	ā		.5	1.6	1.5	2.0					
0.0	1	J1	1					J. Silty W/Root Fibers &	Small % O	f (M-LPL)	10
-	12	-		11	14	-	Clay				
-	7		-	-	1			•••••			
-		-	 	1	1			• • • • • • • • • • • • • • • • • • • •		• • • • • • • • • • • • • • • • • • • •	
	6							•••••••••••			
_											
-	11			-							
5.0 -	11			-	-						
13.6	11	J2	4	-	-		Gray Sandy SAND . W	Small % Of Gravel		(M-NPL)	18
	3			11							
					13						
_	21										
	38								• • • • • • • • • • • • • • • • • • • •		
_	30			-							
_	23										.
	0.7										
10.0	23	7.7	-				Casa Clasica CILT II	/Small % Of Gravel & Po	akate Of		
_	22	J3	5	6			Gray Silty Clay		CKETS OI		
				-	5						
	30						•••••				
	40						•••••				• • • • • • • • • • • • • • • • • • • •
	59										
		R1					Run #1 Dar	k Gray SHALE			
15.0							RE(. 60" 100% 12 PIECES			
_							h	QD = 87%			
_											
-								•••••			
_											
			ليب	لببب	لسب		RO	TTOM OF HOLE AT 19 Ft	······································		
							סע				
							C (HCCC	h:		
							Surface elevation is	based on USGS topograp	nic map		
								DOTAL OTO COST	DEGUES		
							UN HEREON WAS OBTAINED	DRILL RIG OPERATOR R. SOIL & ROCK DESCRIPTION D.	DECKER T	BUILHODD	
							PURPOSES. IT IS MADE ONLY THAT THEY MAY HAVE	REG GEOTECHNICAL	KINEL, J.	DOCHEND	
							AVAILABLE TO THE STATE.	ENGINEER PHILLIP A. WALTO		REAGAN	
							BUT IS NOT INTENDED AS	DATE APPROVED 19-JUL-95	REVISION #1	ST OF MEN ST	
		UTE						STRUCTURE NAME LINDSAY RD. B. I. N.	350 W UF J	LI UF NEW RD	
CONTRA		OF SU			PACT			SHEET 1 OF 1	HOLE	DN-X-N10	7



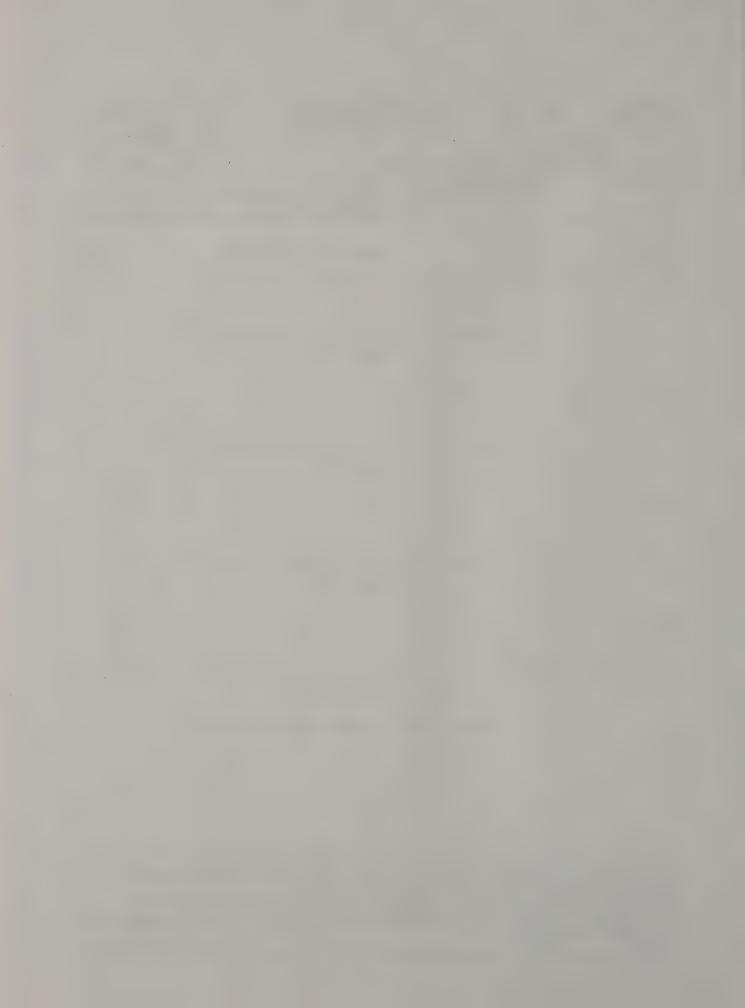
SM 2821	E (2/1 664	16) 17		BOR	NUM	10	8 DEPARTMENT	OF NEW YORK OF TRANSPORT	TATION			HOLE	DN-X-N1	08					
REGI	0N _		8.				GEOTECHNICAL SUBSURFACE	2	00.10.				E. O. P						
COUN	TY _	ORA	ANGE					EXI CORRIT	0,4 20	,,,		STA	SEE MAP						
PIN						-0 -	NEURIDOU CTTE (EAC	7.					75						
COOR	4						NEWBURGH SITE (EAST	,					/. 450	Ft.					
COUR	DIMH	15 6	UC.				TART 08-MAY-87	DATE EI	NISH	as			JATER 1	Ft.					
CASIN	G O	. D. 4	1/1	2					ASING	300	LBS	HAMMER	R FALL-CASING						
DEPTH ft BELOW SURFACE	CASING	SAMPLE NO.	8	SAN	WS O		DESCRIPTION OF SOIL AND ROCK												
0.0	М	J1	P. 5	1.	1.5	2.8	Brown And Light Br	own Clayes	SIL	T , Gr	avelly	W/Root	(M-LPL)	(%)					
-	3 25 37 38						Fibers & Small % O	f Sand											
5.0	33 6 31 138	Ј2	15	19	53		Gray Sandy GRAVEL	.Sĭ∣ty W/O	lrg. &	Smal	77% 0	f Clay	(M-LPL)	8					
10.0	117	R1					Run #1 Mec RE	dium Gray C. 53 96 RGD = 56.6	SHALE 3% 3%										
15.0								OTTOM OF H											
							Surface elevation is	s based on	US65	o topo	graph	ic map							
TUE E	IIBCIIO	FACE	TAIF	- Man	TION	CHO	IN HEDEON LIAC ORTATAIEN	DRILL RIG	OPE PA	TOR	D	DECKER							
FOR STAVAILE ACCESS	TATE ABLE S TO PRES BSTIT	DESI TO AU THE S ENTED UTE	GN A THOR AME IN FOR	INFO	ESTI US RMAT ID FA ESTI	MATE ERS ION ITH, GATI	WN HEREON WAS OBTAINED PURPOSES. IT IS MADE DOLY THAT THEY MAY HAVE AVAILABLE TO THE STATE. BUT IS NOT INTENDED AS JONS, INTERPRETATION OR THE STATE.	SOIL & ROC REG GEOTEC ENGINEER DATE APPRO STRUCTURE	HNICAL PHILLI	CRIPTI IP A. I 19-JUL	ON <u>D.</u> WALTON -95 R	BY JOHN C.	. REAGAN	RD.					
CONTRA		J. JU		CONT				SHEET 1	-			HOLE	DN-X-N1	80					



	2E {2/			BOR	NUM	10	9 DEPARTMENT	OF NEW YORK OF TRANSPORTATION	HOLE _	DN-X-N1	09				
REG	_		8				GEUTECHNICAL	EXPLORATION LOG		LINE E.O.P.					
	NTY _		ANGE		01		_		STA OFFSET	SEE MAP					
							NEWBURGH SITE (EAS	Τ)	SURF. ELEV		Ft.				
C008	RDINA	TE L	oc.	(/					DEPTH TO W	ATER 3	Ft.				
CASIN	via r). D. 4	1/2	, ··		. D.	TART 12-MAY-87	DATE FINISH 14-1 OF HAMMER-CASING 300 L		EALL-CAETNE	' 1 Q TAIC				
	LER C				I			OF HAMMER-SAMPLER 300 L		FALL-SAMPLE					
# H	Z	Ш		BLO	us o	N									
30	Ø H	٩.		SAM	PLE	?		DECENTRATION OF COTA	ID DOCK		MOIST.				
DEPTH #	S S S S S S S S S S S S S S S S S S S	SAMPL.	8	1.5	1.0	1.5		DESCRIPTION OF SOIL AN	ND RUCK		CONT.				
	ă u	-	. 5	1.6	1.5	2.0					(%)				
0.0	7	J1	1_	1	-		Brown Sandy GRAVEL	,Silty W∕Root Fibers		(M-PL)	14				
-	1			1	1				*******************	• • • • • • • • • • • • • • • • • • • •	+				
-	11							•••••							
-	17			-	-	-			• • • • • • • • • • • • • • • • • • • •						
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-	26	-		-				••••••							
5.0	39														
-	45	J2	8	6				Silty SAND , Gravelly	W/ Small % D	f (M-LPL)	18				
-	1 4 3			10	5		Clay		• • • • • • • • • • • • • • • • • • • •						
_	47							***************************************							
	225						***************************************								
_															
-	71	R1					Run #1 Da	rk Gray To Black Fissi	le SHALE						
10.0							N.C.	C. 36 86% RQD = 87%							
-							· · · · · · · · · · · · · · · · · · ·								
_															
_		R2					Run #2 Dai	k Gray To Black Fissi C. 60 100%	le SHALE						
-								RQD = 62.9%							
_								••••••							
15.0															
_															
-															
		R3					Run #3 Dar	k Gray To Black Fissi	le SHALE						
_					-		KE.	C. 60 100% RQD = 100%							
_															
20.0															
20.0															
-															
		R4					Run #4 Dar	k Gray To Black Fissi . b0 100% RQD = 84%	le SHALE						
							RE	C. 60'' 100%							
								(GD 04%							
25 2															
25.0	CUPCUC	EACE	TAIC	DOMA	TION	CHO	N HEDERAL LIAC ORTAINER	BOTH DIC ODCOATOR	B DECKED						
								DRILL RIG OPERATOR SOIL & ROCK DESCRIPTION		BOUCHARD					
AVAIL	ABLE	TO AU	THOR	IZED	US	ERS (INLY THAT THEY MAY HAVE	REG GEOTECHNICAL							
							BUT IS NOT INTENDED AS	DATE APPROVED 19-JUL-95		KEHUAN					
A SI	JBSTIT	UTE I	FOR	INV	ESTI	SATIO	INS. INTERPRETATION OR	STRUCTURE NAME BARRON RI		T OF FORESTE	R RD.				
	EMENT							B. I. N.	- אטו ב	DN-X-N10	q				
CONTRA	ACT			CONT	RACT	UR _		SHEET 1 OF 2	HULE	DIA. Y - IATO					



SM 282	E (2/7	6)								ST	ATE C	F	NEW	YORK	<											
PSN	664	7		BOR	NUM	10	9		DEF	PARTME	ENT 0	F	TRAN	SPOR	TAT	ION	J			Н	OLE		DN-	-X-N	10	9
	ON		8 NICE							URFA										L	INE		E. 0.	. P.		
PIN	ITY —	DRF	a a	0 70	71.1																FFSE			MAP 5		
	ECT					R -	NEWB	IURGH	SIT	TE (E	EAST)							SU			_		380	F	t.
i	DINAT							EAST													t TO		_			Ft.
					DAT	E S	TART	12											AY-	87						
CASIN	ER O.	D. 4	1/2		I	. D. 4				WEIG WEIG	HT O	F	HAMM	1ER-	CAS SAM	ING PLER	30	0 LB	s s		НАММ НАММ	ER F	FALL -	-CASIM- -SAMPL	VG LER	18 IN 18 IN
DEPTH ## BELOW SURFACE	Z	SAMPLE NO.	1	BLOW		N R					D	ES	SCRI	PTI	0N	OF S	50IL	. AN	D RO	DCK					- 1	MOIST
25. 0	M C		.5	1.8	1.5	2. 0																			-	(%)
															 					 						· · · · · · · · · · · · · · · · · · ·
_		R5					Run	# 5		· - · · · · · · · · · · · · · ·	Dar	k.	Gra	y T	o B	lac	k Fi	ssi	le S	SHAI	LE					
											REI	? ?Q!	D =	98%	1007	 										
70.0																										
30. <u>0</u>																										
_														 												
		R6					Run	#6			Dar	k	Gra	y To	o B	lack	Fi	5 S i	le S	HAL	Ē				-	. - . -
											REC	QI	Б =	98%	00%											
-							• • • • • • •							• • • • • •												
35.0																								· · · · · · · · · ·		
7							· · · · · · · · · · · ·																			
1		77					Run	<u> </u>	· - ·		Dar	 	GF 21			Lack		eeil		НДІ				· · · · · · · · ·		
-											REC		60 =	1	00%							• • • • • • • • • • • • • • • • • • • •				
+											! \			1.0.0.												
40.0																		 								
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		1	1								BOT	Τ(OM C)F H	IOLE	AT	42		Ft.			• • • • • •	• • • • • •		.d	
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							Surt	ace e	e l e v	ation	n is	Þ	a 5 e	d or	n U:	565	top	ogra	aphi	C II	nap					
																					`					
THE SI																ERATO		140.1	R. D	~~~		T D	OUCU	ARR		
FOR S											1		IIL &				KIPT.	IUN .	IJ. K	TIMM	EL,	J. B	UULH	нкп		-
ACCES!	s to t	HE SA	AME :	INFO	RMAT:	ION A	VAILA	BLE TO	O THE	E STA	TE.	Ε	NGIN	VEER	PHI	LLIF					IOHN		REAGA	N.		
IT IS	BSTITU	ITE A	FOR	INV	ESTI	GATIO	NS,							TURE	NAN	-	RRON	N RD.	380				OF	FORES	TER	RD.
JUDGE		r 5U(JTHOR			R5.					-				N				Н	OI E	Г	1NI - 1	(-N1	na	



REGI	664 ON _	7	8	BOR	NUM	109	9	GEDIEL	RTMENT	OF NEW YORK OF TRANSPORTA ENGINEERING DE EXPLORATION	BUREAU		L	HOLE _	E. 0	D. P.	109
PIN	ITY _	A03	0.0	0.70	11		_							STA		5 MAP	
						R -	NEWBUR	GH SITE	(EAS	Γ)				. ELE			Ft.
COOR	DINA	TE LO	oc.	(A				AST						н то и	JATER	3	Ft.
CASIN		. D. 4	1.17			E S1		12-MAY-		DATE FIN: DF HAMMER-CA				LIONANATI			
SAMPL						. D. 3				OF HAMMER-SA							IG 18 IN ER 18 IN
BELOW SURFACE	BLOWS ON	SAMPLE NO.	0		PLER	1.5				DESCRIPTION	1 OF 50	IL AND	ROCK				MOIST CONT. (%)
25.0_																	
_		R5					Run #	5	Da	rk Gray To	Black	Fissil	e SHA	ALE			
-									RE	C. 60 100 RQD = 98%	0%						
30.0																	
-						-											
1					-												
		R6					Run #	6	Da	rk Gray To	Black	Fissil	e SHA	LE			
-									RE	rk Gray To C. 50° 100 RQD = 98%	0%						
1																	
5. 0						-											
-										•••••							
+																	
7		R7					Run #	7		k Gray To 1	DI sale (- CUA				
1		K I					Kun 4		RE	C. 60 100 RQD = 100%	Mack 1	7.1551.16	5 2UH	L.C			
+										RQD = 100%							
1																	
0.0				-	-												
1																	
+					-												·····
二																	1
									ВО	ITTOM OF HOL	LE AT 4	12 F	t.				
							Surfac	e elevat	tion i	s based on I	USGS t	opogra	phic	map			
														,			
T1.1=			•	200			m1 445.55	DV 1125 5	TATUST	DOTI - CTO	OCDATAG) Dec	VER			
								ON WAS OB		SOIL & ROCK					BOUC	HARD	
AVAIL	ABLE 1	TO AU	THOR	IZED	USE	RS 0	INLY THA	T THEY MA	AY HAVE	REG GEOTECH	NICAL	_					
IT IS	PRESE	ENTED	IN	6001	FAI	TH,	BUT IS	E TO THE NOT INTEN	IDED AS	DATE APPROVE	ED 19-3	TUL-95	REVI	SION #1	1		
	BSTITU							TERPRETAT	ION OR	STRUCTURE NA	AME BAR	RON RD.	3800.	N OF J	CT OF	FOREST	TER RD.
ONTRA		Jr Sui								SHEET 2	-		L	401 E	DNI-	X-N1	ng

